

Formulating Disaster Risk Management Plans of Laamu Atoll Isdhoo Ancient mosque and Male' Friday Mosque

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1. Introduction

In Maldives there are more than 1190 islands and among approximately 200 islands people are populated. Basically about 200 years ago Maldivians lived in habitats that were temporary. As a matter of fact the houses were easily built stick and thatch houses² (Fig. 1), which can be relocated if needed at any time. The most permanent structures seen in the islands are the Coral stone mosques. These mosques are built by interlocking of coral stone blocks without using mortar.



Fig 1: Stick and thatch house

Therefore in a case of relocation easily these structured can be dismantled and relocated. The coral stone mosques are constructed about 5 foot above the ground. In case of flood people approach the mosque for safety. If the island is severely flooded islanders migrate to another island and start over their lives in that island.

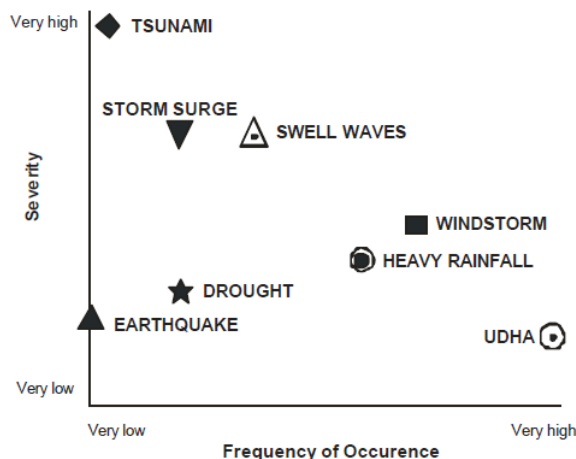


Fig 2: Different types of hazard and its intensity

Today the lifestyle has changed drastically, as the habitats have become more permanent. The Maldivians who had learnt to live with the disaster have started to build barriers to avoid these hazards which lead to a series of unrecoverable damage. The construction of artificial barriers to protect the islands from waves have initially destructed the natural reefs which were already protecting the islands. These lead the islands to be highly vulnerable to hazards like Tsunami and swell waves (Fig.2). Moreover the most vulnerable structures in the islands are the ancient coral stone mosques, those which

have survived for more than 2 to 3 centuries.

Among all the cultural heritage sites in Maldives, the coral stone mosques are the best preserved masterpieces. These Coral Stone Mosques of the Maldives represents a unique example in Indian

Ocean of an outstanding form of fusion coral stone architecture. They have Outstanding Universal Value as an example of a type of coral stone architecture with coral carvings and detailed lacquer work quality not seen in any part of the world (Fig.3). The architecture, construction and accompanying artistry are in themselves a work of human creative achievement.

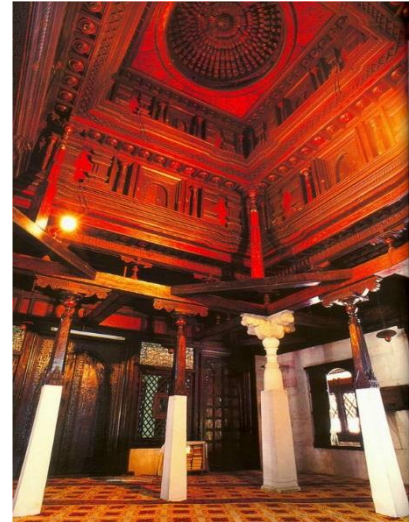


Fig 3: Interior view of the majestic lacquer work quality

2. Identification of the threats and vulnerability

Recently 6 coral stone mosques of Maldives are being inscribed in the World Heritage Tentative List. The management systems of these mosques need to be strengthened to uphold this title. Among this six mosques my biggest concern is Laamu atoll Isdhoo ancient mosque and Male' old Friday mosque. One structure is located in a humble island and the other structure is located in the heart the city, therefore the two sites are prone to different threats.

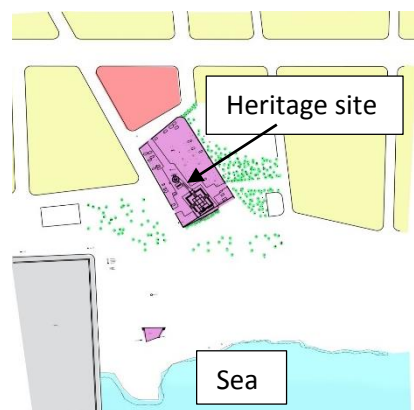


Fig 4: Location of Laamu Atoll Isdhoo old Mosque

The old mosque in Laamu atoll Isdhoo is in the beach adjacent to the sea (Fig.4). Therefore the mosque has a high probability to be a victim of Tsunami. The high content in salt humidity has already weakened the structure. Moreover lack of maintenance due to poor management have made the structure very fragile. So these lead the structure to weathering and growth of vegetation. Therefore this has an immediate impact that the structure might have a high probability to collapse and also may cause human deaths.

Unlike Laamu atoll Isdhoo old mosque Male' Friday mosque is located in the heart of the most active city island. The structure is more exposed to vandalism. Male' is a very congested city with high social and economic problems. It is unfortunate that

the frustration that get built within the angry society is being released on the national prides. The mosque to be located in front of the president's palace makes the location popular for strikers. Next the road adjacent to which the mosque is a high traffic road which make the structure exposed to carbon dust, leading the structure to weathering. Therefore due to the reasons there is an immediate impact that the structure be smashed and may cause injury for people.

3. Strategic plan

In the case Laamu Atoll Isdhoo mosque the most fundamental requirement for preparedness is installing Tsunami alert system and also prepare evacuation routes and drills for the people. Preparation of condition assessment of the site is highly required to record the data. All the necessity elements and rescue teams need to be ready at all times. If any disaster has occurred the locals who affected physically and mentally need to be treated and counselled. This counselling

sessions can integrate religious lectures that can calm the people mind and revive their faith and hope. The destructed places needs to be cleaned and begin reconstruction of the damaged sites in order to provide visual hope for the survivors of a new beginning. Integrate disaster risk management plan in Heritage management plan. It is the islanders who are the real caretakers of the site, therefore more training programs about conservation and maintenance need to be conducted. The cycle of response/preparedness, Recovery and prevention and mitigation continues.

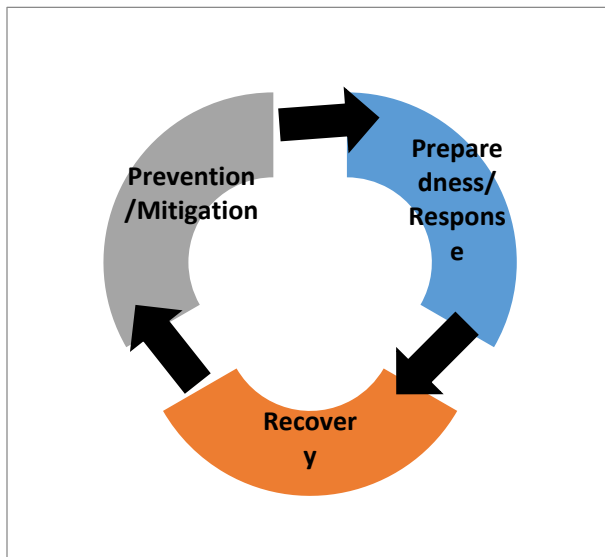


Fig 5: cycle of response/preparedness, Recovery and prevention and mitigation

In the case of Male' Friday mosque the initial preparedness is installing cctv and other surveillance appliances. Moreover introduce boards to notify that the site is under surveillance. Like Laamu Atoll mosque, this mosque also need to prepare evacuation and drills for the people. Preparation of condition assessment of the site is highly required to record the data. In the recovery stage the people responsible for vandalism needs to be captured and should be punished. As soon as possible the destructed site needs to be cleaned and reconstructed. It is highly recommendable to involve community in the reconstruction of the site, as this will strengthen the community bond, with the structure. Integrate disaster risk management plan in Heritage management plan.

Organize more awareness programs to the city dwellers, to increase their respect and love for the site. Proper management system of the site need to be established. The cycle of response/preparedness, Recovery and prevention and mitigation continues.¹

4. Disaster mitigation and risk preparedness plan (short & long term)

The most essential element to protect the heritage site is making a strong legal framework. Presently there is no specific law to safe guard Maldives, heritage law need to be drafted and established. To increase efficiency of the management of heritage site a manual to maintain and monitor the sites need to be prepared. These manuals need to be familiar to the site managers of the islands. In the case of mosque the site managers are usually religious leader. Daily updates are needed to be exchanged between the site managers and Department of heritage. The security of the sites can be increased by collaborating with the National defense force. More drills can be conducted to aware the people. These programs can also increase the community relationship with the site.

Table 1: Disaster mitigation and risk preparedness plan

ACTORS	SHORT TERM	MID TERM	LONG TERM
Department of Heritage (A. Architect) + DRM unit + Religious leader + Attorney General Office	• Prepare and Revise the existing heritage law • Create a manual to monitor and maintain the site • Incorporate the manual in the DRM plan • Train a person from the island to monitor the place • Fund Raising Programs	• Update the manual • Train staffs to use the manual • Collect the updates of the site • Research the new threats and try to find preventive measures • Update the DRM plan • Conduct awareness program of the importance of the heritage sites	• Review the manual • Plan for climatic change • Review the heritage law
Site Manager (Religious leader) + Department of Heritage (Research officer)	• Monitor the site • Daily updates informed to Dep. Heritage	• Improve the monitoring system by introducing high technology • Record the daily conditions and find solution for improvement	• Review the monitoring system • Review the data base and identify the new threats

5. Conclusion

Formulating a disaster risk management plans involve important role from the policy level and also the community level. As the policy will guide the people and the community to take care of the site and be well prepared to face the disasters. Therefore the output of the management plan will make the people more aware of the site. Subsequently the community will start to love the site and will get more attached with the site. Outcome of the management plan will be the people will be able to seek harmony and faith from the site and this will ultimately provide safe guarders of the place.

6. Reference

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2. MOHAMED.N: Essays on Early Maldives, National Center for Linguistic and Historic Research, 2007