CHAPTER 7

Conclusion

The objective behind the present research work is to make an in-depth survey of the biodiversity in and around the heritage sites of West Bengal and to identify the key factors bringing about deterioration of the biodiversity as well as the heritage monuments as these are Museums as per International Council of Museums (2007). The survey of biodiversity around the heritage sites reveals interesting data and thus highlights the biologically rich zones that people and Museum professionals may be unaware of. In some of the areas, endemic plants have been replaced by exotic varieties. The effects of such exotic varieties on that heritage site have been studied, analyzed and interpreted in detail. It also delves deep to find out how far vegetation in and around heritage sites helps in preventive conservation of the particular Museum / site as well as maintain the biodiversity of that area. The study sought to investigate and answer the following questions:

1. How important is biodiversity in the perspective of heritage preservation?
2. What are the primary and secondary threats to heritage sites / Museums?
3. What are the primary/secondary threats to surrounding bio-entities?
4. What are the strong points as well as flaws in maintenance and management of heritage sites?
5. How strong is the connection between visitors and gardens?
6. What strategies could be adapted to enhance biodiversity conservation around heritage sites/ Museums?
7. What are the visible symptoms of damage to both the site and surrounding biodiversity pattern?

Finally, the researcher analyses how Indian Museums could make use of the intensive study of these three heritage sites / Museums by dissemination of such knowledge through its outreach and inhouse programmes. The end of this chapter justifies the beneficial role of this study for a Museum in dispensing its educational commitments.
The study is primarily based on two Cultural Heritage Sites-
   a) Victoria Memorial Hall, Kolkata
   b) Bishnupur Group of Temples
and one Natural Heritage Site, i.e. Sundarbans National Park.

- **Empirical Findings to combat Biodeterioration of Museums**

  The main findings are chapter specific and are elaborated within the respective chapters. This section is synthesizing the empirical findings to answer the research questions.

  Biodiversity surrounding any cultural heritage site does play an effective role in preservation of the site. There are specific trees and shrubs that play positive roles in reducing the impact of atmospheric pollution in a pollution affected zone (PAZ). This is evident from the Scanning Electron Micro-images that show the amount of pollutants deposited on the leaves collected at different heights and analysed.

  During the tenure of my research work, I have been able to identify the significant primary and secondary threats on Victoria Memorial Hall, Kolkata. The chief deteriorating factor is atmospheric pollution, which is probably a potent primary threat. In all three cases, it is seen that human beings are directly or indirectly responsible for the primary threats. Secondary threats occur as a result of primary threats.

  Regarding threats to the bio-entities, many factors are responsible. Firstly, natural factors like *Aila*, had a great impact upon the vegetation surrounding the Victoria Memorial Hall. Large number of trees like Neem, Mango, Rainbow Eucalyptus, *Cassia* were uprooted. Anthropogenic factors like atmospheric pollution bring about deterioration of the less tolerant vegetation. Impact of tourists and visitors is also great upon the vegetation. Graphitti on tree trunks is very much common in the two cultural heritage sites. In Sundarbans, this is not so common, maybe due to the presence of sharp pneumatophores on the soil and adverse conditions. Too much of visitation leads to trampling of the vegetation. Tourists have a great impact upon the vegetation and are a matter of serious concern. Sundarbans too has been
suffering the brunt of harsh storms, the worst been *Aila* and *Tsunami*. The location of Bishnupur temples is such that it is generally unaffected by natural calamities like storms.

As far as the damaging symptoms, for marble structure, it is mainly yellowing, staining, blackening, caused due to biological and anthropological factors. For the terracotta temples, it is the salt incrustation and biological colonization leading to deterioration of the temples. For a Natural Heritage site, loss of species, gradation of species into threatened and endangered, satellite imageries showing the reduction in decrease of forest cover are all evidences of deterioration of the site.

Management strategies require strategic scientific modifications and regular monitoring so as to safeguard both the cultural and natural heritage sites as well as Museums.

To do justice to the case of cultural heritage sites, besides the proper protection of biodiversity, management strategies involve proper visitor management, development of interpretation centres to inculcate sense of awareness of the people, popular publications that mention the do’s and don’ts.

In case of Victoria Memorial Hall, much more awareness needs to be created on the surrounding Garden in the complex. The garbage accumulation at the south eastern site is to be taken care of. More of educational programmes need to be conducted based upon the Garden and particularly the floral patterns. Publications like field guide of the surrounding Garden, etc. are to be brought out for creating awareness.

To undertake the preventive care of Terracotta temples, awareness of the local people as well as visitors are of utmost importance. More and more publications need to be brought out and circulated among the local people, tourists and for the unlettered, regular interaction is necessary. Awareness should be taken at the school, college and University level about the temples. Documentaries are to be produced for each and every temple highlighting the
need and necessity of proper preservation that too with the dynamics of nature. Society should be made culture sensitive.

For a Natural Heritage site, the primary factor that needs immediate attention is controlling visitation. To do this, tourism is to be well managed, i.e. the concept of Ecotourism needs to be practiced in a much effective way rather than as practiced now. More and more of popular publications, especially on the importance and significance of the Mangroves are to be highlighted and circulated among the populace.

Studies have shown that there exists a strong connection between visitors and the Garden as well as plantations in and around the museum site, in case of cultural heritage sites and visitors and the Forest in case of Natural Heritage Site. Considering the Cultural Heritage Site, we see that it is often the pleasant view of the surrounding garden that makes the monument stand out, eg.- in Victoria Memorial Hall, there are separate tickets for entering only the Garden and separate tickets for entering the Museum. People love to enjoy the Garden especially in winter months. Moreover, lots of people have been granted membership to Morning Walkers, Evening walkers and to walk around the path made for this purpose. The Sound and Light Show screened in the months of Summer and Winter with the seating arrangement is positioned at the eastern corner of the Garden. Moreover, from whichever sides, i.e. North, South, East or West a visitor enters, he or she has to pass through the Garden to reach the Museum.

For the Bishnupur Group of Temples, each of the Protected temple lie within a well maintained Garden, supervised by the Horticulture Section of the Archaeological Survey of India. The burnt colour of terracotta looks brilliant within the lush green gardens. During the evening time, the gardens and the monuments are well lighted up. People love to take photographs within the gardens with the monument behind.

Sundarbans National Park is intimately connected with the people. There are interpretation centres for the visitors at strategic locations. As far as the local people are concerned, their daily lives are strongly inter-connected and
interdependant with the Mangrove forests. They largely depend on these forests for their livelihood, by collecting wood, honey, fish, prawn seedlings. As a result, they come into regular conflict with the forest entities like honey bee, estuarine crocodile and of course the Bengal tiger. On the other hand, they would love to protect their forests, if they are given the chance of alternative livelihood options, like working as Guides for the Tourists or if we empower them socially, economically and culturally.

Serious attempt has been made by the scholar to undertake some measures by which museums and formal institutions could bring about awareness on the need for protection and preservation of the biodiversity around a Museum. A thorough understanding of the environmental dynamics and importance of the Heritage sites and monuments will inevitably lead to the preservation of the sites. Through this research work, the importance of the Heritage sites as well as how the surrounding vegetation could inevitably help and lead to the preventive conservation of these valuable sites have been explored in detail and also how the populace could be aware of such facts have been studied.

The researcher has made some comparative studies with the management strategies adopted by some heritage sites within India. Of these, the importance of Garden has been wonderfully portrayed in the Humayun’s Tomb. Just before the entry to the tomb, there is an indoor display area where the entire layout and significance of the surrounding Garden has been put forth. All the visitors therefore are made aware of the Garden before they see it.

The Taj Nature Trail established within few metres of the Seventh Wonder of the world, Taj Mahal is again quite impressive. For people will learn to love nature alongwith the Heritage Site in the background. It is seen to be a place where visitors could enjoy both the nature diversity as well as the architectural wonder. The successful operation of the battery operated car/buses is another interesting point to be noted. This concept can be implemented near the Victoria Memorial Hall where vehicular pollution is the chief threat to the monument.
In the natural heritage site, e.g. Keoladeo National Park, I have observed the presence of milestones at regular intervals, mentioning the type of fauna to be observed within a few metres of that site. This concept is again quite interesting. For visitors get first hand information about the area as well as the significance of that particular bird and other animals.

With the advent of technologies, the usage of touch-screen to retrieve information about the temples of Bishnupur is perhaps a good initiative to bring about awareness to the local people about all the details of the temple alongwith the visuals. This initiative has been taken by Archaeological Survey of India (ASI) in some temples of the South, and if such measures are taken in Bishnupur, it would be effective indeed.

Interpretation centre and popular publications can definitely play a very positive role in creating awareness about the surrounding biodiversity of a region.

In Chapter 6, the researcher has already discussed how individual museums/interpretation centres in relation to the three sites could create awareness on the surrounding biodiversity. Of the three sites under study, Victoria Memorial Hall is itself a museum and could undertake lots of activities and awareness programmes to create awareness on its Garden. In Chapter 6, (pg.456-457), the researcher has mentioned some of the significant educational programmes undertaken by Victoria Memorial Hall to raise awareness on the Garden entities. In the same Chapter (pg.458, 465-468), the researcher has discussed the activities that are and could be undertaken for mass awareness on the heritage temples of Bishnupur. In the same Chapter, (pg.470-480 and 483-484) the researcher has also discussed awareness programmes undertaken by various interpretation centres of Sundarbans, the only natural heritage site under study. The chapter also gives examples from other heritage sites in India which undertakes awareness programmes on its heritage. Comparative studies have been undertaken with Smithsonian Institution, Washington DC, which undertakes programmes to create awareness on its garden. To sum up, we can say that a Museum can play a
significant role in communicating the need of preservation of biodiversity around a site.

The major findings from this research study can be taken as a tool for Indian museums to carry on their educational awareness programmes on the three heritage sites. Since anthropogenic causes pose a threat to all the three sites, a Museum can take the responsibility of inculcating the sense of awareness to the people through its array of in-house and outreach programmes. Awareness has to be brought firstly on the individual sites and then mostly on the anthropogenic threats affecting the respective heritage sites.

Dissemination of information across different sections of the society, especially on Environmental issues is a very important commitment of a museum. The National Museum of Natural History, New Delhi along with its Regional branches at Mysore, Bhopal and Bhubaneswar have been undertaking varied educational activities based on Environmental pollution, Destruction of environment by man, Forest Wealth, Extinct and Threatened Animals of India, etc. Such programmes were befitting for educating school students. The researcher feels that the intensive study done by the researcher in the present thesis can also be beneficial for Science Museum, Natural History Museum or even a Multipurpose Museum in dissemination of knowledge. In the following paragraphs, the researcher proposes some of the innovative ways through which a Museum may utilize the findings of this study in the form of educational activities according to different target groups:

**Target Group: School Students**

**Motto:** Museums should give young students, the decision makers of tomorrow a chance to voice their concerns and to become involved in the protection of our cultural and natural heritage. They should be encouraged to participate in heritage conservation and to respond to the continuing threats facing the studied Heritage sites. Ecological and conservation messages will be conveyed through special programmes.
Topics to deal with:

- Introduction to the Heritage sites- Victoria Memorial Hall, Temples of Bishnupur, Sundarbans Tiger Reserve.
- Effect of pollutants on the heritage sites.

In-house Programmes:

1. **Walk-through Dioramas on the Sundarbans Mangrove Ecosystem/ Temples of Bishnupur:**
   
   This will help the students to practically identify the flora and fauna depicted in the exhibit. Local boys/ girls may be given the responsibility of the guide. The aim of the nature trail will be to provide an opportunity to the visitors to enjoy the scenic beauty and learn about some exotic and indigenous trees as well as the interrelationship of flora and fauna. The Bengal Natural History Museum, Darjeeling and Indian Museum, Kolkata has already created a walk through diorama on Sundarbans Mangrove Ecosystem. Diorama may also be created on the heritage temples of Bishnupur alongwith their natural surroundings.

2. **Activity room:**
   
   A room may be created for children and students whereby they will be given activity sheets on the Heritage sites. The sheets will contain interactive questions and answers based on a video they will be shown on introduction to the three heritage sites- Victoria Memorial Hall, Kolkata, Bishnupur temples and the Natural heritage site- Sundarbans with special reference to anthropogenic threats.

3. **Audio-video media on bioentities:**
   
   Museums can develop **Audio video media** on “Birds Interactive display system” where the students can have one way interaction with the birds voice modulator whereby the natural voice of the Birds of different species can be heard. This can be made applicable to create awareness on avian diversity of Sundarbans.

4. **Quiz / Nature drama / Nature Parade / Workshops/ Slogan preparation/ Model Making:**
   
   Museums may undertake Educational Awareness Programmes like Quiz, Nature drama, Nature Parade, Workshops and Slogan preparations on Threats and various factors of deterioration of the
studied heritage sites, Biodiversity conservation and so on. Models on the studied heritage sites can be prepared by the students and exhibited.

5. Puppet Shows:

Museums can initiate organising puppet shows on role of plants in safeguarding heritage / how humans damage Victoria Memorial Hall/ Sundarbans/ temples of Bishnupur, for primary level students.

6. Lecture series for students on human threats to the studied heritage sites may be effective.

7. Preparation of Publicity materials:

Museums can create awareness through publication of interesting bilingual publicity materials on maps of the concerned zones, emphasizing mainly on the threats. Separate books should be there for all ages. Educative CD-ROM should be developed on the studied sites. Museums can also initiate developing stickers on these sites, booklets, mugs/ key rings / T-shirts for the student level.

8. Creation of Pictorial Series:

Students at primary level can convey the message of Heritage preservation to their peers by creating pictorial storyboards where they introduce the concerned Heritage site, present the threats it is facing and offer their own ideas to preserve it. Selected storyboards can be developed and professionally produced as an episode of the cartoon series. While engaging in a creative activity, these young students may at the same time raise their awareness on the World Heritage sites and of sustainable development issues. The activity also encourages these young minds to propose solutions for the preservation of these sites, making the people aware of the importance of their role in preserving them.

Outreach Programmes:

1. Organisation of Nature camps/ Summer/ Winter camps:

To observe special days like Wildlife Week, World Forestry Day, World Biodiversity day, World Environment Day, World Heritage Week / Day, Sundarban dibosh, museums may organize Nature Camps with the students during Summer vacation or Winter
vacation of the schools. The students may be taken to the respective heritage sites, i.e. Victoria Memorial Hall, Bishnupur Temple Complex or Sundarbans Biosphere Reserve. Activity Sheets on heritage sites may be distributed to them, whereby they would be asked to identify the visible threats and suggest simple means of protection of the sites.

2. **Plantation Programme:**
   In Chapter 5 (pg.219), it has been mentioned how every year, Victoria Memorial Hall loses trees as factors like storms/ cyclones. The trees lost may have significant roles in purification of the atmosphere. As such to compensate such loses, the Museum can undertake plantation activities in their garden through students on significant days like World Environment Day, World Forestry Day. So students will not only be motivated about knowing the significance of heritage sites but such an endeavour will also help in preservation of their neighbourhood biodiversity.

3. **Adopt-A-Pond programme:**
   In order to protect the Sundarbans wetland, Museums may undertake Adopt-A-Pond programme, emphasising wetland habitat protection, conservation and restoration.

4. **Short-term Environmental Education Projects:**
   Museums can coordinate community environmental education projects with schools whereby awareness generation may be created.

5. **Seasonal exhibits on bioentities of the studied heritage sites at the school premises:**
   Seasonal temporary exhibits on bio-entities of the heritage sites like the Sundarbans Mangrove Ecosystem may be organized in different schools.

**Target Group: College/ University Students**

**Motto:** This is a vital group that will understand the significance of preservation of heritage and can prevent people from damaging the
sites. They can also be educated on the role of trees in absorbing harmful particulates, with special reference to the studied heritage sites.

**Topics to deal with:**

- Threats to the heritage sites
- Role of trees in absorbing harmful pollutants
- Biodeterioration of Monuments
- Ecotourism
- Anthropogenic Threats to the studied cultural heritage sites

**In-house Programmes:**

1. **Exhibits on Blow up of Scanning Electron Microscope (SEM) images showing trapping of particulates by leaves:**

   This has been discussed in Chapter 5 of the present thesis. Blow ups of SEM images of the various leaf samples as illustrated in the respective Chapter can be kept as separate exhibits with proper lucid yet scientific explanations.

2. **National/ International Seminars on Biodiversity and Heritage of West Bengal/ Endangered species/ Sustainable living/ Ecotourism/ Biodeterioration of studied heritage sites:**

   Museums can hold National or International Conferences on Biodiversity and Heritage of West Bengal/ Endangered species/ Sustainable living/ Ecotourism/ Biodeterioration of studied heritage sites/ targeting College and University level which will not only involve the students but all the researchers and professors as well. How the absorption of pollutants can affect the studies heritage site will inevitably influence students of Environmental Science.

**Outreach Programmes:**

**Temporary exhibitions:**

1. Posters may be designed on topics like- *Threats to heritage sites, Role of trees in absorbing harmful pollutants, Biodeterioration of Monuments, Ecotourism and Anthropogenic threats to the studied cultural and natural*
heritage sites and carried as temporary exhibits to different colleges and universities.

2. Camps may be organised by the Museums where students will be taken to different heritage sites to identify anthropogenic threats or bio-deterioration.

**Target Group: Researchers**

**Motto:** Researchers form a significant group who search for regular scientific findings. The thesis brings into limelight some interesting scientific findings linking science and heritage. So, Museums can organize special programmes for researchers focusing on the scientific findings, as given in Chapter 5 of this Thesis.

**Topics to deal with:**
- Scientific findings linking Science and Heritage
- Biodeterioration of the monuments
- Threats to flora and fauna of Sundarbans
- Role of plants in combating air pollution

**In-house programmes:**

1. Museums can prepare exhibits on salient findings from research work, including Blow up of Scanning Electron Microscope (SEM) images of the leaves and Bio deterioration of marble / terracotta.

2. Salient findings from various research work on the mangroves may be highlighted separately within the Museums to make researchers and other academicians aware on the ongoing researches involving the mangroves as well as threats. This can be in form of inhouse exhibitions or temporary exhibitions outside the Museum premises. The Scanning Electron Microscope (SEM) Plates featuring absorption of particulates by leaves can be displayed and interpreted.

**Outreach programmes:**

1. Temporary exhibition on exhibits showing Scanning Electron Microscope (SEM) Plates of particulate absorption by leaves present in and around the
studied heritage sites alongwith the interpretations may be taken out to the colleges and Universities for awareness generation.

**Target Group: Family**

**Motto:** Families may include children, grandparents as well as parents. So for such a diversified group, awareness needs to be created on the heritage sites itself along with the anthropogenic threats and ways to combat them.

**Topics to deal with:**
- Anthropogenic Threats to the studied cultural heritage sites
- Ecotourism-effects on the natural heritage site

**In-house Programmes:**

1. Special programmes for families may be arranged based on Ecotourism and on the studied heritage sites. These include screening of documentaries on the studied heritage sites that intends to create awareness on the site with a special emphasis on the anthropogenic threats and ways to combat them.

**Outreach Programmes:**

1. Outdoor programmes for families may be conducted by the Museums at the heritage site or at a site close by.
2. Handouts may be given on spot which bears pictorial depictions of the threats to the sites and ways to combat them.

**Target Group: NGOS -**

**Motto:** NGOs are capable of initiating intensive training or professional development programmes and are responsible for a large portion of public education. They are capable of organizing programmes with general people. Museums can initiate intensive training/professional development programmes for NGOs.

**Topics to deal with:**
- Anthropogenic Threats to the studied Cultural and Natural Heritage sites
Since NGOs deal with common people, museums should try to popularize them with the anthropogenic causes affecting the studied heritage sites.

**In-house Programmes:**

1. **Training on popularization of the threats affecting heritage sites:** NGOs maybe invited to the Museums. Training may be imparted to them on the anthropogenic threats affecting the studied heritage sites and ways to prevent such damages.

**Outreach Programmes:**

1. **Youth camps:**

   Museums in collaboration with NGOs may organise Youth camps, lasting between two to four weeks for general people. Young volunteers can carry out concrete actions, comprising both hands-on preventive conservation activities and information sessions on issues related to the heritage sites, as well as activities carried out together with local communities.

2. **Publicity and Awareness through Posters:**

   Museums may prepare Posters on effects of pollution and other anthropogenic threats on the studied heritage sites and distribute them to the NGOs for further communication to the general people.

**Target Group: Teachers**

**Motto:** Students look forward to interesting and popular lectures from their teachers. Many a times, schools do not find it easy to bring their students to the Museum. In that case Museums should come forward and impart training to the teachers in National and Regional level on the studied heritage sites. Teachers may be encouraged to take their students to the studied heritage sites.
Topics to deal with:
- Awareness on the heritage sites
- Anthropogenic Threats and Deterioration to the sites
- Significance of preservation of the studied heritage sites.

In-house Programmes:
1. **Development of Educational Resource Kits:**
   Museums may develop Kits for the secondary level school students (printed version and interactive DVD format) which could contain materials related to the conservation of biodiversity around Bishnupur, Victoria Memorial Hall and Sundarbans and distribute them to the teachers. The Kit may include chapters on heritage sites supplemented with resource materials containing brief descriptions of the sites, map, photo gallery, educational approaches to protection of Heritage sites, factors of deterioration of the sites, role of plants in protection and preservation of the sites with special emphasis on the studied sites.

2. **Teachers Training Programmes:**
   Museums may impart training to the teachers from various schools on how to use the kits prepared for the students on the studied heritage sites.

Outreach programmes:
1. A short tour for the teachers can be organised in the respective sites to train them how to make students identify the significant bio-entities of the heritage sites.
2. Flyers may be prepared on how to impart awareness to the students and sent to individual schools for distribution.

**Target Group: Tourists**

**Motto:** Tourist group should form one of the major group for any museum to create awareness on heritage sites. As it is evident from Chapter 6 of this thesis, the tourists form a major sector that need to be made aware on the significance of preservation of the studied heritage sites for deterioration of the studied sites is primarily due to anthropogenic factors.
Topics to deal with:

- Awareness on the respective heritage sites.
- Significance of preservation of the studied heritage sites.
- Anthropogenic threats on the studied Cultural and Natural heritage sites.
- Ecotourism.

In-house Programmes:

1. **Pre tour package for the tourists, in the museum before their visit to the respective heritage sites.**
   Museums may undertake pre tour package for the tourists, where a tour will be conducted in the museum before their visit to the respective heritage sites. In that tour, the museum will try in all possible ways and means to introduce the site to the tourist, with special reference to the Do's and Don't's applicable for the tourists for a particular site.
   The Sundarban Biosphere Resource Information Centre, was built with this motif and purpose.

2. Exhibits can be prepared to create awareness on the sites.

3. Films may be screened on the potential anthropogenic threats to the sites and how such threats can be overcome.

4. Museums may also prepare DO's and DON'Ts in the form of leaflets and distribute them to the tourists before they visit the sites.

Outreach programmes:

1. Pre tour demonstration for the tourists, in the respective heritage sites.

2. Distribution of leaflets based on threats and awareness on the heritage sites to the tourists with special emphasis on anthropogenic threats.

Target Group: Populace of the Remote Villages

**Motto:** To reach to the remote village schools and villagers, museums can create mobile units, which will hold exhibits on the biodiversity, damages by humans as well as preservation measures.
**Topics to deal with:**

- Awareness on the respective heritage sites
- Anthropogenic Threats on the studied Cultural and Natural heritage sites
- Protection of the village wealth from the poachers
- Ways to prevent the sites from being deteriorated including the role of villagers, particularly for Sundarbans Tiger Reserve.

**In-house Programmes:**

1. Museums may initiate to make transport arrangement for the populace / children of remote villages and create inhouse awareness programmes on the significance and protection of the heritage sites under study.

**Outreach Programmes:**

1. A Mobile unit can be created specifically on Bishnupur temples. It will contain an introduction to the heritage temples, threats and deterioration and ways to overcome such threats. This Museum –on – wheels may be taken to remote villages during observation of Heritage week. In some cases, the bus may also travel to Bishnupur and generate awareness to the local residents.

2. A Mobile Unit may also be created on the Natural Heritage of Sundarbans emphasizing ways of protection of the sites with the help of the villagers.

3. In case of Sundarbans, villagers can be trained how to protect the forest from poachers, how to be efficient guides, guiding tourists in a proper way.

Thus, we see that the work undertaken by the researcher definitely serves to benefit a Museum which can fulfil its role towards the society by undertaking a variety of educational programmes based on different target groups. A concise summary of the suggestive educational programmes that a Museum may undertake based on different Target groups is given in Appendix – VII (pg. xxi-xxv).

**Theoretical Implications**

The theoretical knowledge that led the researcher to undertake this area of research needs to be revisited / reinvestigated again and again in order find whether the findings supports or contradicts the past knowledge.
Chapter 7

- **Recommendation for future research/ Scope of Future Work**

While undertaking research in the current area, the researcher feels that some topics have not been covered in this present study maybe due to some limitations as already mentioned before in Chapter 2 of this thesis. To generate achievable policy strategies and development targets with regards to diversification, there is need for more case studies at the local level to allow further assessment of local dimensions of the subject. Exploring the following as future research strategies can facilitate the attainment of this goal. So, it is considerably worthwhile to investigate the following points in the near future:

1. Finding out the Air pollution Tolerance Index of all the Trees and shrubs in Victoria Memorial Hall, Kolkata.
2. Analysing the particulate matters on each leaf.
3. Studying the effects of each particulate matter on the leaf.
4. Analyse the particulate matters on leaves of each tree surrounding the terracotta temples.
5. Identifying the biological species bringing about deterioration of the terracotta plaques in the temples.
6. For a natural heritage site, analysing the effectiveness of Ecotourism and increasing its opportunity is very much effective.
7. Continuous study of the variations of the composition of the nearby waterbodies.

Future research could fill in the gaps or limitations as encountered while carrying out this research.

The deteriorating factors identified are atmospheric pollution, water pollution, soil pollution, natural calamities as well as anthropogenic activities. The individual effects on each of the sites under the present study have been undertaken.

Finally it can be said that the study is very much significant in today's context. The Heritage sites need to be preserved for the future generations to enjoy and appreciate its worth and most importantly to retain its Status. Both Cultural and
Natural Heritage Sites of West Bengal are getting prone to various factors of deterioration. Government and non-Government agencies are taking various Conservation strategies and measures to restore the originality of the sites. While doing so, one perhaps overlooks the preventive measures that nature itself can take to prevent the deterioration of the sites. The study delves deep to find out how the surrounding vegetation (in case of Cultural Heritage site) and the components of the site itself (in case of Natural Heritage site) helps in preservation of the site and thereby needs to be protected immediately. The Sites under consideration have been described in details alongwith the deteriorating factors affecting each site. Steps have been suggested to prevent the deterioration of the Sites naturally. In this 21st century, protection of Nature and biodiversity is the main issue that is being considered. The researcher highlights another valuable role that nature plays that will help in monitoring the protection of the site and give its future protection. The research covers an intensive study of only three sites, each unique in its own way. The biodiversity status of each of the sites has been studied, followed by preventive role of the components of ecosystem that aids in natural protection of the site. This research is a model one and further studies need to be undertaken in other types of Heritage sites to provide protection naturally. The researcher feels that the study will no doubt facilitate Indian Museums in designing a variety of educational activities targeting the different groups of the society. Such activities will indeed prove beneficial to the people and gain appreciation.