

## **Disaster Risk Management in Sri Lankan University Libraries an Overview**

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### **Introduction:**

Disaster Risk Management in libraries has been a widely researched topic because of the importance it has in ensuring the safety of material, buildings and other resources which are available. Also another important feature of disaster risk management in libraries rests within the commonality of natural, man-made and hybrid disasters which can cause a threat to the resources available within a library. Also, the value and importance of libraries are high as they store a wide range of historical, scholarly and technological resources. The study is an overview of why emphasis should be given on preparedness and preventing disasters that can cause harm to university libraries.

Disasters can occur in many different ways to university libraries. Common types of natural disasters include fire, floods, cyclones whereas man-made disasters include terrorist attacks, thefts and vandalism. COVID-19 pandemic which started to spread globally in the beginning of 2020 is considered as a disaster to the whole world and for every sector of society. According to the health authorities, the first case of COVID-19 was reported on the 9<sup>th</sup> of March 2020 in Sri Lanka. It spread and developed as a natural disaster in spite of all the contradictory assumptions about its origin.

### **Disasters in university libraries:**

Garnett (2019) considers many natural disasters that can act as a threat towards academic libraries and how the unawareness about the cause and the impact of these disasters can bring drastic effects to the resources of great importance that are stored inside them. Fleisher and Heppner (2009) highlights the importance of the development of a project proposal and how support should be taken to develop the plan by taking into consideration the purpose, the aims, the methods and the objectives of formulating such a disaster plan. Fleisher and Heppner's (2009) study takes into consideration the importance of time and financial resource management in formulating the plan since disasters are highly unpredictable and because of this feature it is vital to form and maintain a plan that can promptly address disasters.

Webb (2010) narrates the story about how a series of unexpected floods brought damage and disaster to the Bothwick Institute of Research and its libraries and how the library staff went through a troublesome period to retrieve the files and documents relating to research that were stored within the buildings. One of the main discoveries during the process of salvaging the documents is the discovery that photographs and some print material were not destroyed completely and that they were at a stage where recreation was possible. Documents stored in plastic folders also survived. The study concludes with the idea that the necessity to have a disaster risk reduction plan at both institutions and libraries is crucial. It is difficult and highly time consuming to conduct the process of retrieving the damaged resources.

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Prestamo (2017) elaborates on the commonality of disaster risks and how difficult it is to recover from disasters and how the services rendered by each and every individual can be taken into regard in overcoming the situation while protecting the facilities and the available collections stored inside libraries. Hamilton (2011) also takes into consideration the common impacts of disasters and how hurricanes are one of the most dangerous and significant natural disasters that can create an ever-lasting impact on libraries and the resources which are stored within. The study is narrowed down to public libraries only in the region of Louisiana and the author makes a claim that one of the reasons for the continuation of disasters at libraries is the common idea among the public that libraries are not essential services. Hamilton (2011) emphasizes on the fact that these ideas should be changed among the public in order to bring in more awareness as to why libraries are crucial in the world. Similarly Jaeger et al (2008) refers to the devastation caused by the 2005 Gulf Coast hurricanes to several public libraries. The study summarizes the lessons learnt during the disasters and how these lessons can be used successfully to formulate and design disaster risk reduction plans and also to bring in awareness in the public about the importance of having such a plan.

Wong and Green (2008) write on the crucial aspects of formulating a disaster plan. The study identifies 6 important components in the disaster risk reduction plan that can be designed for both public and academic libraries and lists them as planning, prevention, response, recovery, preparedness and training. The study states that so many institutions and libraries face many difficulties when it comes to disasters as they believe that disasters and unpredictable crises will not happen to them and that this idea needs to be changed especially within the communities that access and work with regard to these institutes and libraries. The study further highlights the fact that the need to establish a disaster risk reduction plan is crucial and highly important to all libraries.

Green and Teper (2008) have carried out a different study where the focus is centered on small libraries and the disaster management plans that can be designed and implemented in order to secure the resources. There are libraries with small buildings as well as with small collections. The study highlights the fact that even small libraries can be at risk of disasters and that they also can be prone to threats of different measures. One of the main things highlighted by the researcher is the strength of communication before crisis situations and the accumulation of knowledge in order to develop an understanding about the type of services provided during emergencies by places outside the library as well.

Another study conducted by Rasaki (2019) writes about the efficient methods that were conducted in several university libraries in Nigeria. Through surveys, the study found out that all the universities did not have a disaster management plan and most staff members were unaware of the disaster risk reduction plans. As a result, losses through theft, storms, computer crashes and harmful effect caused by pests and vandalism were commonly seen in libraries. The study introduces the steps that could be taken to mitigate the risks and lists them as the provision of fire extinguishers and strengthening security measures as first steps that can be taken to minimize the disastrous impacts. Negligence, lack of knowledge and poor management vision were also seen as problems that have become reasons for the cause of damage through such disasters.

When considering the disaster risks to library collections, thefts are one of the major disasters that can bring about a great damage. Thefts in libraries can be of two forms. Common experience on thefts in libraries is the acts of disloyal customers. In addition, Griffiths and Krol (2009) discusses about man-made harmful impacts on libraries such as insider thefts. The study begins through a brief introduction to insider thefts that have been taking place throughout history since the time of Greek civilization. The researchers identify the addiction to drugs and alcohol as one of the significant factors behind insider thefts. Other factors affecting insider thefts would be the inability to overcome personal losses and

debts. Employee screening, marking of items and access control are some of the primary steps that can be taken by libraries to mitigate this threat.

The importance of formulating disaster management plans for medical libraries is discussed by Beales (2008) highlighting about the various resources stored inside. Further, he states that these libraries are mostly vulnerable to floods, fires and internet losses. Beales (2008) also highlights the fact that although most people do not consider medical libraries as a resource center that has an impact on scholarly work, that the importance of safeguarding these resources are also important and mandatory. Eden and Matthews (1996) writes about the importance of staff counseling and lists out several plans in minimizing the impact of disasters. However, the study mainly focuses on the need to introduce insurance coverage and the installation of a system that would help a library to detect fire in order to control the situation.

Lonergan (2011) categorizes disasters as purposeful, malfunctioned, unanticipated and accidental. When considering these types of disasters, the burning in the Jaffna library in Sri Lanka can be taken under the category of man-made and purposeful. Also the destruction of library material during bombing of US embassies in Kenya and Tanzania falls into this category (McMichael, 2007). However, another study (Van der Hooven and van Albada, 1996) discusses about the destruction done to libraries that has taken place all around the world while adhering to a timeline. They trace the destruction from the early period of Nazi occupation of Europe and continue to both natural and man-made destructions. They also include the research carried out by UNESCO and IFLA about the destruction of manuscripts and texts in the library of the University of Louvain in Belgium during World War I. The study also explores the measures taken by libraries across the globe and lists out the steps taken to minimize these risks. Kasapovic (2015) explores the devastation that took place in the libraries in Bosnia and Herzegovina during a period of war. According to this study, the lack of proper systems of legislations, non-availability of systematic methods of handling computer generated activities and non-establishing of cooperative cataloging are caused the destruction during war.

### **Experiences of Disasters in Sri Lankan Libraries:**

Knuth (2006) writes about the origins of the Jaffna Public Library and how a small collection of about 1000 books developed slowly into a major library collection with time. The location of the library was changed and it was eventually opened to the public by giving the chance to access a wide variety of books, newspapers, magazines and journals to readers who were interested in spending their time in a valuable manner. The collection achieved international claim and was famous for its unique collection of books that could reveal hidden and unknown facts about ancient Sri Lankan history. Several sections were added to the Jaffna library later including a section to store children's books and also an auditorium with the help of the scholarly community that resided in Jaffna. The fire at the Jaffna library in 1981 resulted in massive destruction of its valuable material and resources that can never be replaced were lost forever. This incident that took place at the Jaffna library can serve as an example for the irreversible damage that can be caused by man-made disasters to libraries and the resources which are stored within as a massive amount of knowledge and historical sources were burnt down within hours and were lost forever.

The tsunami in 2004 brought in devastating results to Sri Lankan libraries that were mainly situated along the coastline and as a result librarians around the country has been promoting the idea to establish more buildings that can resist huge water currents and also structures that can be built on pillars. Warnasuriya (2005) writes about the impact of the tsunami on Sri Lankan libraries in 2004. On a similar note (Amarasiri, 2005) writes about the devastation that was caused by the tsunami and its massive

impact on public libraries, school libraries, and community and temple libraries. He further discusses the challenges faced in rebuilding the destroyed resources and the lack of land and other infrastructure facilities. The study brings into light the importance of disaster risk reduction plans and how these type of damages can be mitigated if the necessary steps were taken and cautionary information were given to the respective parties in order to mitigate the impact of these natural disasters on libraries. According to Amarasiri (2005), all respondents from libraries that took part in a survey revealed that they have not received any guidance or advice on how to prepare prior to a disaster at a national level or on a smaller scale. The study emphasizes on the fact that only the example of the devastation that was caused by the tsunami waves in 2004 is enough for libraries to take the necessary steps in building and formulating a proper disaster plan, especially for libraries situated along the coastal line.

Since the author of this paper is attached to the University of Sri Jayewardenepura, a few personal experiences with regard to disasters at the library drove the author to explore more about disaster risk reduction and preparedness. University of Sri Jayewardenepura was established as a 'pirivena' in 1873. The library collection consists of more than two hundred thousand volumes and hundreds of scholarly journals as well as electronic materials. In addition, the library has a vast collection of rare books and palm leaf manuscripts in its possession which is invaluable. In November 2018, the Ceylon Room of the library where the rare books and palm leaf manuscripts are housed was affected by water due to a leakage in the pipe line system in the upper floor during the night. It was about to overflow and wash off the collection by the time the library was opening. If that happened, the restoration process of soaked books and manuscripts would have been very costly and time consuming. Replacing with new copies is not an option for rare books and manuscripts. The adjoining Interactive Study Area was equipped with 40 computers and peripherals for students use. Water was soaked by the floor carpet used in that particular room and special soaking equipment was hired to restore that area. Heavy duty dryers were used to dry up the area. It took a few more days to get rid of the damp smell and various primary methods were used to remove the smell. There were no proper disaster management practices to follow after such devastation.

Another time, a cyclone took away the roof of the Technology library and the whole collection was damaged due to rain water. The recovery process applied for wet books was none other than keeping those books open in natural air to dry gradually. Out of the lot, two books could not be restored back to the normal condition due to the damaged caused by fungi. Only after going through related literature and professional discussions, it was found that heavily soaked printed materials should be kept under deep freeze condition for a few days to avoid fungal growth on the materials.

Many books infected by mould were found on the shelves of the library over the time. It was found that the newly added books were also threatened by mould infections due to the transfer of insects from old books to new. The necessity of controlling the spread of silver fish and other insects was felt by the library staff. All the infected books were collected to a designated place from all the collections. The National Archives was so generous enough to support in fumigating 3000 books. The rest of the infected books, nearly 16,000 were fumigated inside the library making a special sealed area with the assistance of one of the government approved pest control companies. This situation is not unique to the University of Sri Jayewardenepura, but other academic libraries with huge collections and that have started a few decades ago may face similar situations. It is better to prevent insect attacks to books rather than treating them after being infected. Though there are several methods including indigenous practices to minimize the growth of moulds inside books, many librarians do not consider this issue as a disaster and hence neglect until it becomes severe. The above explained few instances show the need of plans to reduce disaster risk.

### **Status Quo in disaster management of academic libraries:**

According to discussions conducted with university librarians, it is found that no any university library has a proper disaster preparedness plan in Sri Lanka. Further, all of them agreed that university libraries are in need of such a plan. Fire is identified as one of the expected disasters in academic libraries. Most of the librarians expressed that though there are fire extinguishers, they were not tested for a long time and their functionality was in doubt. Few libraries have fire alarm detectors installed in the buildings where library resources are kept. One librarian expressed her ideas about the installed fire alarm detectors saying that, “Our fire alarm system is not functioning and to make it function better, and for repairing, lot of money is needed.” Another respondent stated that the library staff has taken actions to refill and service the existing fire extinguishers within the stipulated time period. Even though some libraries have initiated efficient measures in minimizing and limiting the damages and destruction caused by fires, few librarians expressed their dissatisfaction about the existing system as some libraries are not equipped even with a fire extinguisher or evacuation paths.

Proper and continuous supervision and management should be done on material in academic libraries where important documents are stored. University of Sri Jayewardenepura library identifies the infected books periodically and conduct fumigation in a specially designed fumigation chamber. Certain libraries use different methods to control silverfish bug infections. One librarian stated that a dust free environment would be the best option to discourage the growth of book worms as well. A good and beneficial development in libraries is providing the air conditioning facilities. The collection areas are air conditioned not only to keep it as a closed area but to maintain the longevity of materials. Library collections stored at a dust free space under controlled temperature conditions help to eliminate mould/insect attacks and fungal growth. Another threat is the possibility of vandalism which is often referred to as the destruction and damage that is done to library resources through human intervention. Library patrons need to educate on careful handling of library materials. Some books are found on damaged condition due to spillage of tea/coffee and food.

Sri Lanka is a country with a diverse society and a unique culture but the country holds sad memories when looking back at its immediate history. The country has extensively suffered from the ravages of the ethnic conflicts and terrorism which lasted more than 30 years. In 2019, the country faced a devastating incident with the Easter Sunday bomb attacks. Terrorist attacks within the country have not been uncommon phenomena. During the terrorist wars, an atrocious act of burning took place at the Jaffna Public Library which is undoubtedly one of the largest libraries in South Asia. As explained earlier in this paper, nearly 95000 volumes of books and priceless manuscripts were destroyed by the fire.

Therefore due to these threats of terrorist attacks, the libraries along with the staff, patrons and the material are under threat. Most of the librarians who were consulted in this study said that security measures should be taken to minimize the occurrence of such activities. They were in the opinion of that the installation of security surveillance systems, deployment of security personnel and training the staff on how to react on this type of situations would be fundamental in producing a disaster risk reduction plan. Additionally, cyber terrorism is also identified as a potential threat to the university libraries. Many librarians predicated that a possibility of such a threat is unimaginable at the moment. Since most university libraries have automated their housekeeping functions, they maintain huge databases with catalogue entries, member information and transaction histories. Furthermore, libraries have developed institutional repositories with their academic and student publications. Library websites are also maintained using servers. Therefore, almost all the respondents were in the opinion that access to library servers or the devices that contain data should be properly secured. It is understood that data

backup should be kept or maintained in a different premise or to use cloud servers. The recovery process of data in a situation of a disaster should be planned well. All the necessary measure should be applied to secure library data.

Disasters due to lightning create problems in the electrical power supply. Fluctuations of voltage might also result in damages to computer equipment and peripherals. None of the respondents knew whether their library buildings are protected by lightning rods. Electricity hazards also give similar damages like that of lightning, but the cause for electricity hazards is not only lightning. Two librarians mentioned that the electrical wiring of their library buildings is very old and the supply has not been completed properly as well. Electricity hazards can occur due to negligence of people. Library staff should take precaution in using electrical items and these equipment must be used only for a specific period of time. Excessive usage may cause damages not only to the equipment but also to the electrical wires and circuits. Electrical wiring done in the past, mostly in old buildings need to re-wire. In addition the capacity may not be sufficient as in the past due to increase in the number of equipment where they consume a substantial amount of electricity.

Water hazards, sometimes can be considered as a separate disaster to floods. Mainly water hazards take place due to human negligence and breaking of pipeline systems. Thus, the harm that is leveled against library resources through water leakages is highly disastrous and it will require a long term process to retrieve the material and restore them in the original state. The process of replacing material soaked in water requires many equipment and workforce. Thus, it is advisable to have properly maintained pipeline systems and drainage systems in order to minimize and limit the harm caused by water.

Poorly maintained library buildings and structural failures may cause damages not only to materials but to people as well. It develops other types of disasters like water, electricity, mould attacks, thefts, spreading of invasive species and lightning hazards. As a result of a poorly designed roof, one library had to remove water after each and every incident of heavy rains and this can be considered as a result of structural failure. Regular inspection of the library buildings and providing necessary repairs at the initial stages of damages can reduce the magnitude of the damage. Attention must be given not only to where the collections are housed but also to the places where the public often walks into such as washrooms etc. During rainy seasons, libraries which are situated near water streams should be given prior warning and caution about floods and the drastic outcomes that might arise with flooding and water leakages. Furthermore, the blocking of drainage systems because of floods. The damage can be minimized by shifting the library materials to upper floors if the library consists of several floors.

As mentioned earlier in this paper, the roof of the Technology Library of University of Sri Jayewardenepura was once dismantled by a cyclone about two years ago. The library is situated in the top floor of the building and had extra-large glass windows which could not withstand the heavy winds. This can be considered as a structural failure as well. The books that were drenched in water were kept for natural drying under room temperature, but few books were infected with fungi and could not be restored back to their original condition. This event became the basis to explore more on disaster risk reduction and to figure out techniques and methods in overcoming the challenges that arise at a moment of crisis.

In a drought condition many librarians have experienced electrical power cuts that lasted for several hours during the day as Sri Lanka's power generation depends highly on hydro power. These conditions may bring adverse effects to library material; both electronic and print and day to day functions of the library. Even though external power supply units are efficient ways of producing electricity, they might not be able to perform all the tasks that are needed to be done, in the similar capacity of the main power supply and cost is too high.

Numerous invasive species can cause disasters to libraries. Monkeys, bees/ wasps, pigeons, mice, squirrels, bugs and mosquitoes are some of the species that university libraries have experienced so far. One librarian stated that squirrels damaged some of their collections and the damage was similar to the damages that are done by mice. They have also damaged the curtains of the library. Other species are a threat to staff and library users in addition to the material damage. One library was seeking the assistance of a pest control company to control the hives of wasps, but after few weeks they have invaded the building again. Once, a librarian has faced a major issue due to the troubles made by pigeons. Students have complained that the noise made by them was intolerable. Sometimes, pigeons come inside the library through open areas which are designed to provide ventilation; they lay eggs inside and make the place untidy. That librarian further stated, "Getting rid of pigeons was not an easy task, because we could not use any unusual methods as some animal activists were opposed of chasing pigeons out". Spreading of bugs in library furniture should be controlled before it becomes a menace to all the staff and library users.

There were few instances where a few faculties of a university were closed due to infectious diseases, but it was not identified as a disaster that has solely targeted the library. A librarian mentioned about one occasion about a chemical hazard. It has happened only in a room of the library where resin oil used for cleaning the palm leaf manuscripts was inhaled by the staff and they were immediately taken to the hospital for treatments.

### **Highlighting facts on the preparedness for infectious deceases such as COVID-19:**

Discussions had with state university librarians revealed that academic libraries in Sri Lanka are not prepared to face a situation where a disaster like COVID-19 occurs. Other than providing the access to e-resources, the services offered by the libraries were completely on halt for a few days from the day that the government declared island wide curfew to restrict the movements of people. Very few libraries had the facility to access their servers from home; remote locations. At the first instance, for about a week or so librarians could not think of their library services, all were concerned about health services and other essential services.

Gradually, libraries started providing their existing e-resources and the e-services could expand due to the opening up of e-resources by the vendors free of charge. E-resources which were provided through IP restricted access made available with username and password access.

Members were informed highlighting the existing services which can be used remotely like institutional repositories. Article requests through inter-library-loan system were fulfilled with the support of other libraries in the network. Librarians need to be prepared to face pandemic situations like COVID-19 and to provide their maximum possible services to the patrons. As many universities started online teaching and learning process, libraries were seeking possible avenues to increase their digital content promoting remote access.

### **Recommendations:**

Disasters can happen at any time and in any form to libraries. Librarians need to be aware of preventing and minimizing the damage that could happen due to various disasters. In addition, it is important to know the recovery processes and possible alternative services to patrons during disasters. Therefore, a research study to identify the possible disasters and to formulate a disaster preparedness plan is imperative. It will enable the university libraries to provide better and uninterrupted services to their user community. Disaster risk management is not only limited to university libraries. Thus, preparing a disaster preparedness plan would be vital for all sectors of libraries in Sri Lanka.

**Research Implications:**

- Identification of the possible disasters in the Sri Lankan context
- Categorization of disasters according to vulnerability
- Formulating preparedness plans for disaster risk management according to categories of libraries or categories of disasters

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