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Library Disasters in Developing Countries:
A Literature Review of Experiences and Way Forward

Gelişmekte Olan Ülkelerdeki Kütüphane Felaketleri:
Deneyimler ve Geleceğe Doğru Adımlarla İlgili Bir Literatür Taraması

Jerome IDIEGBEYAN-OSE, Roland IZUAGBE, Goodluck IFIJEH,
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A Literature Review of Experiences and Way Forward

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Abstract

Disaster management has been a subject of interest to libraries and librarians, because of its implications for disaster preparedness and control. This paper is a review of literature on disasters experienced by libraries in some developing nations, with a view to discovering workable solutions that would help to either prevent or manage future occurrences. It examined library disasters in Egypt, Philippines, Nepal, Jamaica, Nigeria and Malawi among others. The paper observed that the initial response of the affected libraries to these disasters was poor. It therefore advocated for the need for disaster plan and preparedness among libraries and librarians in developing countries. It further suggested the following as the way forward – conduct of risk assessment, formulation of disaster plan and policies, mitigation, quick response to disaster and workable recovery plan among others. As a result of this research, it was concluded that disasters would be prevented and better managed in libraries if these precautions and recommendations are implemented.

Keywords: *Disasters; disaster management; library disasters; developing countries; disaster plan; mitigation; recovery plan.*

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Öz

　　Afet yönetimi, afete hazırlık ve afet önleme tedbirlerini kapsaması nedeniyle kütüphaneler ve kütüphanecilerin ilgilendiği bir konu olmuştur. Bu çalışmada, gelecekteki olayların önlenmesine veya yönetilmesine yardımcı olabilecek uygulanabilir çözümlerin keşfedilmesi ümidiyle, gelişmekte olan bazı ülkelerdeki kütüphanelerde yaşanan felaketlerle ilgili literatür gözden geçirilmiştir. Çalışmada, başka ülkelerin yanı sıra Mısır, Filipinler, Nepal, Jamaika, Nijerya ve Malavi'de yaşanan kütüphane felaketleri araştırılmıştır. Çalışmada, söz konusu felaketlerden etkilenen kütüphanelerin ilk tepkilerinin zayıf olduğu gözlemlenmiştir. Bu nedenle gelişmekte olan ülkelerdeki kütüphaneler ve kütüphaneciler arasında afet planı ve hazırlığına ihtiyaç olduğu savunulmaktadır. Bunun da ötesinde, çıkış yolu olarak başka konularla birlikte sıralananlar önerilmektedir: Risk değerlendirmesi, afet planı ve politikalarının oluşturulması, zararların azaltılması, afete hızlı müdahale edilmesi ve uygulanabilir kurtarma planı. Araştırma sonucunda, bu önlemlerin ve tavsiyelerin uygulanması halinde felaketlerin önleneceği ve daha iyi yönetilebileceği sonucuna varılmıştır.

　　Anahtar sözcükler: *Afetler; afet yönetimi; kütüphane felaketleri; gelişmekte olan ülkeler; afet planı; zararların azaltılması; kurtarma planı.*

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Introduction

Information plays a key role in education, research and subsequent development of nations. Libraries as institutions that provide access to information are assets to any country. They have their origin in early civilizations and have remained relevant even in the 21st century. Libraries contain very vital collections comprising of printed and non - printed materials. National libraries serve among others as repositories and archives where important documents of historical value are kept. Before the advent of information and communication technology (ICT), most libraries were traditional in nature. The major collections were comprised of printed materials, housed in physical buildings. The emergence of ICT did not eradicate the existence of the print materials and buildings. Libraries in the 21st century have become hybrid in nature, acquiring both print and non-print materials as well as offering traditional and ICT-based services. This trend is common in developing countries. When affected by disasters, library collections (Prints and Non-prints) are almost irrecoverable. Disaster can be describes as an occurrence of events that results to losses and distructions at levels which society or community may not be able to handle (Lindell, Prater, Perry, & Nicholson, 2006; Idiegbeyan-Ose, Nduka, Adekunjo, & Okoedion 2015; Idiegbeyan-Ose, Nkiko, Idahosa, & Nwokocha 2016; Ifijeh, Idiegbeyan-Ose, Ilogho, & Segun-Adeniran, 2015; Idiegbeyan-Ose, Ifijeh, Iwu-James, & Ilogho, 2016; Ifijeh, Idiegbeyan-Ose, Ilogho, & Segun-Adeniran, 2016). Ottong and Ottong defined library disaster as any incident which threatens human safety and/or damages, or threaten to damage, a library's building collections (or items therein), equipment and systems (as cited in Idiegbeyan-Ose, Ifijeh, Ilogho, Iwu-James, & Izuagbe, 2019, p. 432).

Developing countries are nations facing social, economic and environmental vulnerabilities. In this work, developing countries are defined as sovereign states that are not yet highly industrialized relative to the industrialized ones and have low human development index. These countries are found mainly in Africa, South America and parts of Eastern Europe and Asia. In our contemporary world, developed countries which are geographically located in Europe, North America and parts of Asia are highly industrialized and have an edge in science and technology. They also possess greater levels of wealth, with very stable governance structure. Due to their low level industry, human development and socio-economic bases, developing countries are far behind their developed counterparts in terms of ICT acquisition, accessibility and application. This is the case in all sectors of developing economies are less competitive, quality of education and research inclusive.

Developing countries are not predisposed to disaster more than developed countries. Because they have vulnerable disasters management systems. However, the 'developing' status of the so-named countries affects their ability to adequately and efficiently prepare and manage disasters, irrespective of type and magnitude. This

paper takes a historic look at past library disasters in developing countries with a view to making recommendations to prevent likely disaster.

Literature Review

Past Library Disasters in Developing Countries

Presented below are some examples of libraries in developing countries that have experienced one form of disaster or the other, alongside the consequent catastrophic effects, causes (where applicable) and extent of damage documented.

The Great Alexandra Library of Ancient Egypt

Disasters in libraries are as old as the word library. The Great Alexandra Library of Ancient Egypt was believed to be the largest library in ancient world. Estimated to hold a collection strength of more than 500 volumes of Egypt, Assyria, Persia, Greece, India and other nations of the world (Chesser, n.d), it was home to the legendary scrolls of the works of great thinkers like Socrates, Plato, Homer etc. The 'what', 'how' and 'by whom' this gargantuan collection of human knowledge went into extinction has remain a subject of debate. Typical of history, there is no consensus among historians and scholars on the root-cause of its destruction. The disagreement notwithstanding, it is widely believed that the Alexandria library was destroyed by fire in 48 BC (as cited in Philips, 2010). Again, the first and perhaps the most popular account has it that having been surrounded by the Egyptian Vessels, Julius Caesar set fire on some of the ships (for his own safety) that escalated and gutted part of the city where the library was located (Haughton, 2011).

However, the focus is not to do a root-cause analysis of the events that triggered the demise of the great library, but to gain insight into the disappearance of one of the Seven Wonders of the World in ancient world (Rollin, 1851). This is an event Haughton (2011) described as "the greatest catastrophe of the ancient world". It is the view of the authors that whatever happened, the destruction of the Alexandria library and its mass collection is a disaster to the world of knowledge.

In the Philippines

Chronologically, "Super Typhoon Yolanda" (as known in the Philippines), is internationally christened, "Typhoon Haiyan" (USAID Fact Sheet, 2014; Harris, 2013). It made its entrance into the Philippines region of East of Mindanao on 6th November, 2013. By 7th November, the strength accelerated and intensified. By 8th November, "Yolanda" made its first landfall over Guiuan triggering strong winds and heavy downpours, which in turn resulted in serious landslide and flooding causing extensive damage to lives and properties **(**National Disaster Risk Reduction and Management Council [NDRRMC],

2013)**.** According to the Council's statistics, 6,300 lives were lost, 28,688 persons injured and 1,062 individuals were reported missing. In modern time, Typhoon Yolanda is alleged the deadliest of typhoons in the history of the Philippines (Harris, 2013; Viray, 2018).

The impact of Yolanda had adverse effects on academic institutions in the affected regions and as expected, their libraries were not spared. The irrecoverable damage Yolanda's brought to libraries was high. Hence, Superio and Alayon (2015) investigate factors that facilitated the destruction. Their objectives were to: ascertain library personnel's awareness of disaster management, identify disaster preparedness and plans for recovery, and highlight factors that accelerated the extent of damage of the libraries and their collections as well as lessons learnt from the disaster. 22 academic libraries formed the scope of their study— 9 libraries from Northern Iloilo, 7 from Capiz and 6 from Aklan all in Northern Panay, West of Visayas. of the 22 surveyed libraries, 18 representing 82% that constituted the majority do not have written disaster plans; only an insignificant 4, representing 18% have written disaster plan. Financial and human resources were reported as the inhibiting factors. Quite a number of the affected libraries are manned by non-professional librarians resulting in low library disaster management awareness among majority of the respondents. This explained why large fraction of their collection could not be salvaged during the disaster. This result notwithstanding, all affected libraries practice disaster management through organized exercise and drills in anticipation of catastrophes. With respect to damage recorded, 14% of the surveyed libraries indicated total damage of their library structures with detached roofs that facilitated the destruction of their collection. Similarly, 36% of the libraries recorded moderate damage, 45% documented slight damage while only one library was spared in the disaster. However, proximity of 2 libraries to shoreline was also found to have expedited the near-total damage recorded due to vulnerability to storm surge.

In Nepal

Nepal, a Southern Asian country was hit by a 7.8 magnitude earthquake on 25 April 2015. Typical of earthquakes, several lives were lost, many rendered homeless and properties worth millions of dollars damaged in the disaster. 8,800 deaths, 23,000 sustained various degrees of injuries (Cramer & Hickok, 2015, Green, 2016). The impact of the earthquake allegedly moved Mount Everest over an inch **(**Kumar, 2016). Since the impact of natural disasters occur indiscriminately, libraries and information centers were not spared in the earthquake. Citing the report of the Ministry of Education on Nepal Libraries, Cramer and Hickok (2015) submitted that Nepal National Library, Kaiser Library and the Tribhuvan University (TU) Central Library which are numbered among the largest libraries in the country were adversely affected. Particularly, the Tribhuvan University library sustained significant damage to the first floor materials and many

of the Rural Education and Development (READ) centers who partners with American Library Association (ALA) suffered loss, along with the surrounding communities. About 450 public libraries and 7,000 school libraries were destroyed (Green, 2016). See figure 1 and 2 for more information.

Figure 1[1]. Tribhuvan University Central Library after the disaster ("Nepal Library", 2018)

Figure 2. Kaiser Library in Kathmandu after the earthquake (Cozens, 2018)

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Figure 3. Nepal National Library after the earthquake (Yamada, 2015)

In Jamaica

Between 8 to14 September, 2004 there was a serious hurricane, known as Hurricane Ivan which blew across the Caribbean causing widespread destruction in Jamaica, Grenada and Grand Cayman with catastrophic effect as a result, flash flood was recoded in Haiti. The ruinous consequences of Ivan occasioned the death of 17 lives, destruction of properties valued at $575, 000 and rendering about 90 per cent individuals homeless (World Meteorological Organization, 2005). As expected, the educational systems in the affected countries were not immune to the devastation. With specific emphasis on Jamaica, Newman and Harris (2015), observed that several higher institutions alongside their libraries were affected in the country. Notable among these libraries according to the authors is the University of the West Indies, Mona library. Various collections (Humanities, Microfilm, Reference etc.) housed in the ground floor were the worst hit due to flooding.

Overall, the West Indies and Special Collection (WISC) of about 4,000 volumes and 1,282 pamphlets most of which are out-of-print; 14,143 volumes from the Open Access Collection, 500 reels of microfilm; 100 cases of microprints and microfiche cards were severely damaged. 7,700 volumes of scholarly journals were soaked causing significant damaged in the Science branch of the library. The Medical branch of the library experienced mild devastation to collection and other infrastructural facilities (Newman & Harris**,** 2015).

In Nigeria

The University of Jos is a federal university located in Jos, Plateau State, North-Central geopolitical zone of Nigeria. With respect to disaster, the University has had two major fire disasters in 2013 and 2016 respectively in two her campuses. The first fire disaster occurred in 2013 in a bid to prevent an impending disaster. As the University Librarian, Akintunde (2016) narrated, the University received grant for the renovation of the leaking roof of the library (a challenge that portend a potential hazard to the well-being

of the collection and other library infrastructure) at the Bauchi Road Campus of the University. While the renovation of the leaking roof was on-going, the library computer laboratory, Circulation and Reserved Units, library card catalogues, furniture and other facilities were reduced to ashes by fire (see fig 4 and 5), resulting in a significant loss of library resources in the tone of several hundred millions of naira (local currency). As Akintunde (2016), further reported, this incident resulted in a bigger challenge than previously envisaged. But for the timely intervention of the men of Fire Service, the fire would have escalated further to other facilities in the campus. See figures 4 and 5 for details information.

Figure 4. The engulfed Bauchi Road Campus of the University of Jos Library (Akintunde, 2016)

Figure 5. Aftermath of the Naraguta Campus of the University of Jos Library fire disaster (Sadiq, 2016)

On 8th October 2016, another branch of the library of the University of Jos (Naraguta Campus) experienced another fire disaster. Quoting Akintunde (2016) and Sadiq (2016) affirmed that the entire collection of Arts, Social Sciences, Management Sciences, the computer laboratory and the reading areas were completely engulfed in the inferno. The fire which started from the library completely destroyed the departments of Accounting, Political Science, Psychology, Business Management and Economics including lecturer offices that share the same floor with the library. According to the Vice Chancellor, Prof. Sebastian Maimako, books, unmarked students' examination scripts and other equipment and facilities were not spared in the inferno. See figure 6 and 7 for more information.

Figure 6. Ruins of the Naraguta Campus after the fire disaster (Sadiq, 2016)

Figure 7. The Naraguta Campus library on library fire during the disaster (Sadiq, 2016)

As part of effort towards the prevention of future occurrence, after the two major disasters, Nwokedi, Panle and Samuel (2017), investigated the extent of staff disaster preparedness so as to ascertain readiness/competence to prevent, mitigate, respond or recover adequately in the event of future occurrence. The study revealed that staff are aware of the fire-safety instructions and safety measures in the library. But sadly, the study found that staff are unaware of what to do to salvage partly damaged resources in the case of fire disaster, and as such, they were not prepared. If after two fire disasters, the library and its staff are still not prepared for the same catastrophe, the outcome will be better imagined than experienced in the case of other disasters never experienced or prepared for.

In Malawi

On December 2015, the library building and about 45,000 volumes of books of the Muzuzu University Library were gutted by fire. The library is said to house the rich and unique collections of Mzuzu city and Malawi in general. Also destroyed in the inferno are various library furniture and equipment. According to Hayes (2016), the Muzuzu University Library was reputed as "one of the richest reservoirs of knowledge in Malawi". The cause of the fire disaster was allegedly attributed to a neglected electrical fault near the library entrance—a claim the Vice Chancellor could neither accept nor reject (Chavula, 2015).

Quite a number of developing countries have experienced one form of disaster or the other that may have led to significant loss of information resources and other infrastructural facilities. More examples are presented in the Table 1 below.

Table 1. Some Library Disasters in Developing Countries

Date	Type Disaster	Affected Library	Country	Extent of Damage	Source
May 1943	Fire	National Library of Peru,	Peru	100,000 volumes as well as 40,000 manuscript destroyed	(van der Hoeven & van Albada, 1996).
June 1981	Fire/Arson	Jaffna Public Library	Sri Lanka	Over 97,000 volumes of books along with numerous culturally important and irreplaceable manuscripts were destroyed	(Maheswaran, 2008)
September 1988	hurricane 'Gilbert'/ water	Norman Manley Law School library, University of the West Indies, Kingston.	Jamaica	Over 150,000 volumes of books and periodicals were damaged.	(Aaron, 2003)

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Table 1 continued

September 1989	Hurricane 'Hugo/ water	Montserrat Public Library	Puerto Rico	About 6,000 books and other infrastructure were destroyed	(Cassell, 2004)
In 1992	War/fire	Bosnia's National and University Library	Bosnia	the National Archives, over 155,000 rare books, and 478 manuscript codices were destroyed	(Riedlmayer, 2004)
July 1993	Flood/ water	Thapar and Panjabi Universities Libraries	India	44,535 out of 63,000 items were completely destroyed	(Kaur, 2009)
In 1998	Arson/Fire	Iranian Cultural Centre library in Mazar-e-Sharif	Afghanistan	55,000 volumes destroyed	(Amirkhani, 2001; Loving, 2002)
April 2003	War/Arson/ Fire	Public Library of Bassorah and the library of the Museum of Ethnography	Iraq	Lost all collections	(Al-Tikriti, 2007; Arnoult, 2003)
		The National Library		30 per cent of its collection lost	
		Baghdad University Library, and the University Library of Mossoul		About 10% of their collectioneach lost	
		University Library of Bassorah		Suffered a loss of about 20%	
In 2004	Arson/fire	Federal Polytechnic, Idah	Nigeria	Volumes of collection destroyed	(Abareh, 2014)
In 2004	Tsunami/ water	170 school libraries, 55 public libraries and 68 libraries attached to religious institutions were either destroyed or damaged.	Sri Lanka	Significant collections and historical manuscripts destroyed	(Gamage, 2005; Amarasiri, 2005)
December 2004	Tsunami/ water	Centre for Documentation and Information of Aceh	Indonesia	Death of 23 library staff, collection and equipment on the ground floor completely damaged	(Robertson, 2005)
July 2005	Flash floods/ water	Many libraries in Maharashtra	India	Several library resources and infrastructure were destroyed	(Zaveri, 2015)
October 2005	Earthquake	The Khurshid National Library in Muzaffarabad	Pakistan	Over 3,500 books and 40,000 documents related to the history of Jammu and Kashmir were destroyed.	(Shaheen, 2007, 2008)

Opinions / *Görüşler*

Table 1 continued

January 2010	Earthquake	The Bibliothèque Nationale d'Haïti and Bibliothèque Haïtienne des Pères du Saint Esprit	Haiti	The library was heavily damaged The library collapsed and collection destroyed	(Mincio, 2010)
March 2010	Fire	Librarian's Office, Federal Polytechnic Bauchi	Nigeria	Valuable library records lost	(Abareh, 2014)
January 2011	Arson/Fire	Ahmed Baba Institute	Mali	Over 20,000 manuscripts destroyed	(Rutto & Otike, 2016)
December 2011	Fire	Egyptian Institute Library	Egypt	One of the important multivolume works on Egyptian history written by French scholars and published between 1809 to 1829 was lost	(Eberhart, 2012)
January 2015	Flash flood	Bindura University of Science Education, Astra Campus	Zimbabwe	Over 3,000 books in the library damaged	(Rutto & Otike, 2016)

Ways Forward

Based on the experiences from disasters that affected libraries in the countries discussed above, the following are the suggested ways forward so as to prevent the adverse effects of disasters in libraries and information centres in developing countries.

Disaster Preparedness and Control

Disasters are usually unforeseen events with unpredictable catastrophic effects, most often, resulting in irredeemable loss. Disasters are occurrences that disrupt the normal environmental conditions of community, imposing significant level of hardship that exceeds the capacity of the affected community to recover completely (World Health Organization [WHO] / Emergency Humanitarian Action [EHA], 2002). Similarly, Shi, Shuai, Chen, and Lu (2010) reiterated that the effects of Large-Scale Disasters (LSD) far outweigh the ability of the social ecological systems of the affected region to cope with. Thus, it behooves relevant stakeholders to implement measures aim at minimizing vulnerability and maximizing efficiency of response for rapid recovery without irrecoverable loss. Since the nature of resources libraries store predisposes them more to disasters such as fire and flood than other forms of disasters, they should champion disaster preparedness campaign. Libraries and other relevant institutions need to take proactive steps towards preparing for disasters through the analysis of the peculiarity of their environment and resources with a view to formulating a disaster preparedness plan (McIlwaine, 2006).

Risk Assessment

Risk assessment refers to the process of identifying potential hazards, analyzing and evaluating same with a view to eliminating or controlling the identified risks. Succinctly, the term refers to hazard identification, risk analysis and evaluation ("Risk assessment", 2017). Prior to developing a disaster plan, a comprehensive risk assessment survey of the library structure, its collection and demographic characteristics of its user-community is imminent in identifying potential hazards. The submission of Kostagiolas, Araka, Theodorou and Bokos (2011, p.522) is also in agreement to the assertion that when they broadly categorized risks that are associated with libraries into the following three groups:

- risk that are external to the library building;

- risk within the library building and services offered therein; and

- risk oriented from human factor.

Such risks, if not effectively and adequately monitored and checked, have the potential to become disasters (Chadha, Papadopoulos, & Karanci, 2007), also this could deny generations' access to their history, heritage and culture (Kaur, 2009). Exploring the methodology of risk analysis of prior disaster chains of typical cases is a good way to start preparing for disaster in other to prevent or control it (Zhou, Wang, & Yuan, 2015). The authors observed further that the process helps to unearth factors capable of causing disasters, if proactively coordinated. Additionally, the exercise also strengthens the disaster planning process which translates to written disaster document that libraries could rely on as a blueprint when identified or anticipated disasters occur. This position is closely associated with Eden and Matthews (1996, p. 47) definition of disaster control measures:

"as a clear, concise document which outlines preventive and preparatory measures intended to reduce potential risks, and which also provides details of reaction and recovery procedures to be under-taken in the event of a disaster to minimize its effect to library resources".

Disaster Plan

A disaster plan is a document (if written) that outlines the procedures required to prevent and prepare for disasters and delegating responsibility to individuals whose duty it is to respond to, or recover from disaster in the event of occurrence (Lyall, 1996). For Ugwuanyi, Ugwu and Ezema (2015), the duty of designing a disaster plan is often assigned to various staff members who comprise the disaster team. As important as this subject to the overall well-being of libraries, their resources and patrons, librarians tend to pay in sincere agreement towards its implementation. Kaur (2009) reported that university libraries in India do not regard disaster planning as a worthwhile

activity irrespective of the country's vulnerability to natural disasters —an outcome the author attributed to lack of awareness and casual attitude among library personnel. Kostagiolas et al. (2011) have reported similar situation from the Greek perspective as an activity that is yet to settle in the minds of those charged with such responsibility. Therefore, librarians' poor perception towards disaster management in libraries is not a regional issue but a global phenomenon.

A well-written disaster plan significantly impact disaster preparedness through its components of mitigation, response and recovery. These stages conform to the three phases of disaster described by Echezona, Ugwu and Ozioko (2012) as "before", "during" and "after"**.** According to the authors, the three phases require multiplicity of plans for efficiency. Thus, the extents to which a library mitigates, prevents or responds to disaster reflect its degree and quality of preparedness.

Mitigation

The concept of mitigation is broad. The term means different things to different individuals or organizations in different contexts. On one hand, it could be in the form of legislation meant to safeguard reputation from character assassination, minors from abuse or the society from anarchy and lawlessness. On the other hand, any physical or technological measure directed towards curbing, forestalling, preventing, or ameliorating danger or vulnerability of any kind is mitigation-based. For example, Ugwuanyi et al. (2015) recommended in their study, based on findings, that libraries should adopt the use of satellite communication systems to monitor disasters.

World Health Organization/Emergency Humanitarian Action (1998) noted that the basic objective of mitigation is to reduce the intensity of risks and hazards from becoming disaster. The author observed further that even if it is impossible to eliminate hazards, vulnerability can be minimized, laying a stronger foundation for response and recovery process. In other words, when disaster prevention fails, control measures should be adopted. This should be incorporated during the planning phase. In disaster discourse, mitigation and prevention are two sides of the same coin —though they mean two different things literally. Disaster cannot be adequately and efficiently prevented or mitigated without training and re-training of personnel who could respond in order to recover using available facilities and know-how. The role of training towards disaster preparedness has been acknowledged in literature (Issa, Aliyu, Adedeji, & Rachel, 2012; Abareh, 2014) to impact mitigation, response and recovery. Thus, how well the mitigation process is harnessed and coordinated, is a measure of disaster preparedness.

Response

As part of effort towards all-inclusive disaster preparedness, disaster response is crucial during and after disaster or catastrophe. The appropriateness of response methods imbibed at these two phases determine what is recovered and when. It is usually a

better practice to prepare for 'worst-case' situations so as not to be taken unawares (McIlwaine, 2006) when they occur. The author categorizes disaster response into two viz: primary and main disaster responses. While the former entails notifying concerned individuals (usually members of the disaster team as outlined in the plan) and agencies, the latter involves assessment of the extent of impact in order to ascertain appropriate method(s) and level of response to adopt.

From the Indian scenario, Kaur (2009) reported that after the Orissa cyclone and Gujarat earthquake in 1999 and 2001 respectively, disasters that occasioned several deaths, many displaced and loss of properties worth millions of dollars, the nation reinforced its response capacities by collaborating with United States Agency for International Development (USAID). This effort best describe the primary phase of disaster response identified by McIlwaine (2006). Still on collaboration, users of the library should also be taught basic disaster management tips and be familiarized with safe response procedures so as to be able to help out if disaster occurs during operation hour. This strategy greatly assisted in salvaging part of the Mzuzu University library collection when fire gutted the library as Chavula (2015) observed. Again, a common denominator exists between the efficacy of response activity carried out and disaster preparedness level.

Recovery

Recovery phase is aim towards coping or restoring or re-establishing library collection and services during and or after a catastrophic occurrence. In the event of disaster, recovery can however be very daunting and expensive. Considering disaster preparedness from digital disaster viewpoint (Zaveri, 2015) observed that recovery could be extended to loss, desctruction, failure or obsolescence. An effective way libraries can recover quickly and effectively from loss or destsruction is taking out a comprehensive insurance policies on the library building, facilities and collections. Abareh (2014) examined this phenomenon in North-Eastern Nigeria focusing on academic library Heads in the twenty-one academic institutions located in the region. Sadly, the study showed that non of the libraries had insurance policy. This implies that a vital part of the recovery procedure was left out in the disaster recovery plans of the studied libraries—if at all a plan exists.

Adequate disaster preparation and control of hazards are relatively cheaper than recovery process. Thus, it is a justifiable supposition that disaster prevention and control is preferable in many instances compared to the costly and endless process of post-disaster recovery (Morgan & Smith, 1997). They submitted further that disaster recovery process can be longer than expected and very expensive to cope with. Frank (2011) substantiated this claim further when he mentioned that four libraries in Washington that suffered minor damage during Hurricane Katrina in 2005 closed down later due to the huge financial debt incurred during their post-disaster recovery processes.

Obviously, disaster preparedness only complete when other measures such as risk analysis, mitigation, response and recovery are adequately catered for in the disaster management plan. Sutton and Tierney (2006) concurred to this assertion that disaster preparedness is a concept that encircles all measures geared towards enhancing life safety when a disaster occurs. Similarly, Kaur (2009) admitted that disaster plans are usually presented as large documents describing each of the disaster preventive, preparedness, response and recovery plans. More comprehensively, Iske and Lengfellner (2015) detailed disaster preparedness and control steps to include: the evaluation of one's business environment; identification of threats and assets; hazards mitigation; develop preparedness responses and channeling each step towards identified hazards; increase capacity for recovery and re-evaluate the cycle as occasion demands.

Conclusion/Recommendations

Disaster management has always been a subject of intellectual discourse in libraries and among librarians. It is shaped with new methods from century to century to meet current expectations and in line with new phenomena and trends. Librarians are concerned with reducing risks to collections in the occurrence of disasters of all types. They are quick to adopt new methods that extend the useful life of collections. However, only methods that cater for the inadequacies of the past are worth adopting. With respect to developing countries, inadequate funding of institutions including libraries, corruption, sabotage, poor work attitude, low level of ICT application and adoption among others pose peculiar challenges. This implies that most libraries in developing countries may not be adequately prepared for disaster management hence; such libraries stand no chance of survival in the event of disaster occurrence. The situation needs to be urgently addressed. Thus, this paper recommends:

i.   The inclusion of disaster prevention/management fundamentals in the Library and Information Science (LIS) curriculum as core subject. This is foundational to nipping the menace of disasters in the bud in libraries. Skills thus imparted infuses librarians-in-training whom the future of the profession belong, with requisite fire, flood and other related emergency prevention and mitigation techniques for effective disaster management in libraries. "Catching them young" through this means portends inestimable benefits for libraries and the profession in general.

ii. Adequate provision of relevant disaster management equipment (e.g. fire and smoke-detection/alarm systems, fire extinguishers, dryers, dehumidifiers, thunder arrestors, tiger dams and water gates) to prevent or reasonably mitigate the impact of disasters when occurrence becomes unavoidable. In the case of flooding for example, Tiger Dams™ (whether synthetic or concrete) could be deployed instead of sandbags to build a   360 degree perimeter wall round libraries that are prone to flooding (figure 4). Similarly, flood barriers such as dikes and levees as well as water gates could also help to prevent libraries situated below sea level (lowlands) from

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storms, hurricanes and typhoons when appropriately designed and strategically installed. For such libraries, the structural integrity of the facility (library building) should be strengthened from the foundation stage proportionate to the prevailing weather conditions. However, making effort in this direction without recourse to first, constituting a disaster response team and adequately training same for quick and efficient response renders the potentiality of these equipment and efforts redundant. Equipping libraries and librarians with necessary tools and skills to handle and control disasters of all type, as well as recovery of lost materials is vital for effective disaster preparedness and control in libraries.

iii. Strong synergy between libraries that are exposed to hash weather conditions with relevant meteorological agencies to furnish libraries with reliable and timely information on imminent floods, cyclones, hurricanes and earthquakes. Accurate warning information prepares and equips libraries with relevant information for informed decisions-making relative to disaster preparedness and response.

iv. The prevention and management of disasters in libraries through good house-keeping practices such as switching off all electrical appliances that pose significant danger to lives and resources or when not in use, closing all water valves, ensuring emergency exit doors are functional for rapid evacuation of persons, library collection and other movable infrastructures in the case of emergency, enforcement of disaster equipment routine maintenance culture, among others.

It is hoped that library managements and other relevant stakeholders would adopt the recommendations of the paper for better disaster management in library and information centres in developing countries.

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