

Lessons in Disaster Recovery from Hurricane Ivan: The Case of the University of the West Indies (UWI) Mona Library

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Abstract:

Disasters, whether natural or man-made, have an impact on the human and organizational dimensions. This is particularly so with respect to the sustainability and management of organizations. In some cases whether you are prepared or unprepared certain conditions may exacerbate the impact of a disaster. In September 2004, Jamaica experienced a category 5 hurricane (Hurricane Ivan), which was recorded as one of the worst tropical cyclone in the island's history. The aftermath of the hurricane witnessed damage to thousands of properties, including libraries and other information units. The University of the West Indies, (UWI) Mona library was one of the libraries impacted by Hurricane Ivan. Using a case study approach, this paper highlights the lessons observed by the UWI Mona library in its recovery exercise. These lessons highlight challenges and successes and are presented in pictorial and textual forms. This paper is of value as it will provide the library and information community with insights into disaster management in a Jamaican university library and from a developing country perspective. Further, this will be the first published paper on the impact of Hurricane Ivan on an academic library community in Jamaica. Consequently, in addition to being somewhat path breaking, it can be used to inform disaster mitigation personnel and persons who have not been exposed to disaster planning within and without libraries in the Caribbean and the rest of the world.

Introduction

“A library or archives disaster is an unexpected event which puts collections at risk. No institution can be excluded from or is immune to such a possibility” (Unesco 1999 p.2). The University of the West Indies, (UWI) Mona library, is an example of this observation. In September 2004, Hurricane Ivan battered the island of Jamaica resulting in the destruction of buildings, machinery, equipment, collection, and the disruption in major services throughout the various sectors. The library and information industry was not immune to this devastation. Jamaica’s experience of and response to Hurricane Ivan revealed a number of lessons for the country in general and for institutions and organizations in particular. This paper documents the lessons observed by the UWI Mona library in the aftermath. These lessons suggest how the Mona library should treat with future disasters. However, the library’s preparedness and response efforts in disasters subsequent to Hurricane Ivan will determine the extent to which these lessons were truly learnt, which is a matter for further research. Notwithstanding, the findings highlight preliminary observations about the UWI Mona library’s disaster planning and response (a Caribbean academic library’s experience), which complements the usual documented and available literature on developed countries’ experiences. While some of the lessons highlighted are not new, the fact that the effects / responses have re-occurred raises questions on whether libraries in general truly learn from disasters, the causes for their re-occurrence, and if these lessons were not learnt what makes them so difficult to learn. It therefore suggests then the need for further re-highlighting and emphasis of these lessons. This paper seeks to engage this needed re-emphasis and re-highlighting, from a Caribbean perspective, with the objective of improving libraries’ capacity for preparedness and emergency response. Further, this is the first published paper on the impact of Hurricane Ivan on the Jamaican academic library community. Consequently, the paper is of value as it adds to the literature on the impact of hurricanes and tropical storms on libraries in general and on libraries in the Caribbean in particular, with a view to highlighting lessons for future planning, mitigation and restoration exercises.

The UWI Mona Library & Disaster Preparedness

The UWI was established in 1948 as a College of the University of London. Coinciding with Jamaica’s independence in 1962, it achieved full university status and became known as the UWI. The UWI is a multi-locational university in the Caribbean with four main campuses:

Mona, Jamaica (the campus of focus for this paper); St. Augustine, Trinidad; Cave Hill, Barbados; and the Open Campus. The UWI offers a number of programmes at the undergraduate and graduate levels in Medicine, Law, Humanities and Education, Social Sciences and Science & Technology.

Each campus has a library system and a campus librarian who provides leadership for each; while the University librarian has the overall leadership of UWI's libraries. At Mona, the library system comprises five (5) libraries: the Main Library (ML), the Science Branch Library (SBL), the Medical Branch Library (MBL), the Law Branch Library (LBL) and the Library at the Western Jamaica Campus (WJC Library). The ML, established in 1952, initially served all faculties; however, with the expansion in programmes offered and the resultant demand for library services the ML was reorganized in 1973 to serve mainly the Faculties of Humanities and Education as well as the Social Sciences, while branches were opened to provide dedicated services to each faculty. Consistent with this the SBL was opened in 1973 to serve the then Faculty of Pure and Applied Sciences, now known as the Faculty of Science & Technology. Also in 1973 the MBL was opened to provide dedicated service to the Faculty of Medicine. With continued expansion in the programme offerings the WJC Library was opened in 2008 to serve the western end of the island and the Law Branch Library (LBL) in 2011, which serves the Faculty of Law.

There is one preservation & conservation librarian who provides leadership for the entire Mona library system and also offers guidance to other UWI libraries as required. In the beginning, the library had no official disaster manual. However, by the early 90s the library developed a series of leaflets on special types of disasters, for example, fires, hurricanes and earthquakes. Additionally, each location would carry out individual disaster efforts until 2003 when the official disaster manual was created (University of The West Indies, Mona Library, 2015). This disaster manual was compiled from said series of leaflets but now represented a more consolidated effort rather than the original isolated efforts that once existed. Additionally, the manual delineated a clear line of responsibility and activity for protecting human lives as well as library resources in the event of any type of disaster. Added to these efforts in 2006 a librarian was assigned to the post conservation and preservation librarian to carry out not only the

library's preservation programme but also to provide leadership for the library's disaster and emergency management programme. The preservation & conservation librarian, along with select librarians and paraprofessionals constitute the library's disaster committee. Each member of the committee has particular roles and responsibilities.

The university recognizes the need to focus on disaster preparedness in general, but on heavy rainfall, tropical storms and hurricanes in particular, which are the most prevalent natural disasters occurring in the island of Jamaica. In this regard, each department / centre including the library, has disaster custodians. Together, these custodians form a team of university custodians headed by a representative from the Office of the Campus Registrar. The library's disaster plan is therefore integrated into the university's emergency management system. Their basic task is to prevent and/or minimize damage to the university's facilities and its contents during the passage of a tropical storm and hurricane. The team meets regularly, and even more so as the hurricane season approaches. Each year the team creates an action plan, feedback is provided from the previous year, major decisions and actions are reviewed, new decisions and actions are taken, and expected roles and responsibilities of the hurricane response custodians reviewed and outlined.

Literature Review

Disasters in Libraries: Highlights of Lessons Reported

Birkland (2009, p.146-147) argues post-disaster lessons learnt documents are often fantasy documents as it is difficult to test whether learning happened after an extreme event because insufficient time has lapsed between the event, the creation of the report, and any subsequent tests of the lessons. He believes instead that "these documents really focus on 'lessons observed' or, more simply, the observations that officials and experts made about the preparations before and responses to the crisis or disaster". He notes however that this is not true in all cases, of course, but the general trend is towards producing such documents to prove that some authoritative actor has done something (Birkland 2009, p.147). A review of the literature reveals a number of important lessons from library disasters, which are presented in this section; whether these lessons were truly learnt or were merely observed is not the focus of this section. This section seeks only to highlight some of the lessons identified by libraries from their experiences

with major natural disasters. Using Strauss' (1987) "in-vivo coding" the lessons reported were coded. This involved selecting from the literature librarians' words or phrases that stood out as potentially significant for showcasing the lessons. These words / phrases were used as themes (same as codes/categories). The following themes emerged: (a) information inventory & communication, (b) resource acquisition, (c) training, testing & practice (d) fluidity, change & flexibility, (e) partnerships and (f) stand-by/reserve advantage.

Lesson 1: Information Inventory & Communication

Information inventory & communication is a recurring theme that can be used to categorize some of the lessons libraries have identified in the aftermath of natural disasters. Two dimensions of this are highlighted in the literature: (a) preparing an inventory of important documents such as a disaster plan, keys, contact information to facilitate communication & access and (b) preparing an inventory of the library's physical resources. According to Ellis (2007, p.110) "evacuating multiple copies of disaster plans, insurance policies, inventories, keys, and contact information should be a requirement". He cautions however "the type of disaster and whether there is any warning beforehand will factor into how this information is distributed and kept safe" (Ellis 2007, p.110). In this context, while gathering is important, information distribution is also imperative. Oliver (2006, p.20) in reflecting on how she handled a library disaster reiterated the importance of information inventory. She revealed that she should have ensured a completed inventory. She also noted that she should have updated her phone list with a copy at home. Similarly Claerson and Long (2006, p.39) note: "The sheer magnitude of Katrina's impact has led task force members to examine, new issues such as clarifying policies and procedures regarding communications after disasters. No one anticipated that library staff would be so widely scattered, separated from each other and their institutions for so long". Donahue and Tuohy (2006, p.5) experiences also highlighted communication as a recurring lesson. They state:

Our systems of command, control, and coordination are predicated on being able to communicate. As one expert told us, "For thirty years, we've said that communications is our biggest problem because it's a house of cards: When communications fails, the rest of the response fails." A major challenge of large disasters is that they destroy our physical infrastructure, including our communications equipment. The most recent example of this comes from Hurricane Katrina, which "destroyed an unprecedented portion of the core communications infrastructure throughout the Gulf Coast region (Donahue and Tuohy 2006, p.7).

Corrigan (2008) and Young (2006) point out the same lesson but offer a solution. According to Corrigan (2008, p.304) “it would be best to include in these alternate contact points such as hotmail or yahoo email addresses and to maintain a library blog or news group on a remote server as a safe central point that staff members can check for information.” According to Young (2006, p.23) the best advice is to have a plan that everyone is aware of and knows what his or her role and responsibilities are.

While preparing an inventory of important documents such as a disaster plan, keys, contact information to facilitate communication and access are useful dimensions of the theme information inventory & communication -- preparing an inventory of the library’s physical resources was also highlighted in the literature as another important dimension of the theme information inventory & communication. Claerson and Long (2006, p.38) reporting on lessons learnt from Hurricane Katrina noted: “one of the most important things is to be aware of what you have”. Bruce and Schultz (2005) underscore this point by noting knowing what you have is important. They raise the questions -- What’s hiding in the corners? How good is your catalog or shelf list? Similarly, Corrigan (2008, p.304) notes: “leaving a data trail to follow in the wake of a disaster is essential to determining losses”. He adds: “our experience has shown that holdings information from the library catalog is useful but likely to be incomplete in capturing the actual number of physical items owned. Periodic shelf counts are highly recommended as probably the most reliable source for an accurate item count” (Corrigan 2008, p.304). Again, an important caution has been given to not only prepare an inventory of the library’s physical resources but to communicate the system used to store and retrieve these resources. Bruce and Schultz (2005) lesson observed which they have titled “not to assume” – alludes to this. They share that not everybody knows Library of Congress; therefore, one cannot assume that external persons assisting with recovery efforts understand “library-speak”. Claerson and Long (2006, p.38) paper also highlights the importance of knowing the physical library resources that you have but goes further to reveal that while this is useful it is also important to be aware of what you have that you would like to save first. In their paper, Robert Lipscomb states: “We had prioritized what we were going to salvage afterwards, which things were most important. That’s something you need to think about” (Claerson and Long 2006, p.38). Therefore, as libraries prepare inventories and

other communication initiatives they should give focus to the administrative as well as the physical component.

Lesson 2: Resource Acquisition

Resource acquisition is also a recurring theme that can be used to categorize some of the lessons libraries have identified in the aftermath of natural disasters. A review of the literature reveals that this has a tangible component (physical aspect) as well as an intangible component (human aspect). According to Ellis (2007, p.111) the library should “maintain a disaster kit at all times and replenish supplies as needed”. He adds: “depending on your needs, an institution may require multiple disaster kits at several locations for one collection” (Ellis 2007, p.111). Similarly, Donahue and Tuohy (2006, p.8) state:

“Large-scale, long-duration incidents demand more resources – personnel, equipment, supplies, commodities, specialized capabilities – than any agency or government can keep on hand, so these resources must be obtained rapidly when a disaster occurs. This makes resource acquisition and management a major function of incident management. Unfortunately, while some materials are cached and pre-deployed, they are often inadequate to meet actual need. This means that resources must be obtained “realtime”.

Similarly, Oliver (2006, p.20) in reflecting on how she handled her library disaster revealed that she should have ensured she had identified in advance those people who were in a position to help her obtain crucial resources, which speaks to the human aspect of resource acquisition. She adds that she should have procured flashlight and spare batteries on the premises, acquired basic Personal Protective Equipment (PPE) in the library for herself and her volunteer staff, as well as include a pair of boots on-site. Bruce and Schultz (2005) also reported a similar lesson, which highlights the human component of resource acquisition. They state that it is important to have a recovery contractor on retainer. The identification / acquisition of physical resources as well as human resources are both important in library disaster preparation and response. The acquisition of physical resources should be specific to region and category and type of disaster.

Lesson 3: Training, Testing & Practice

Training, testing and practice is too a recurring theme that can be used to categorize some of the lessons libraries have identified in the aftermath of natural disasters. According to Ellis (2007, p.110) “regularly testing and implementing ideas is a start to further preparation”. He notes

“having an idea about how one might respond to a disaster and putting that plan into action are two different scenarios, and every disaster is different”. Additionally, “Julia Young, Director of the Archives and Library Division of the Mississippi Department of Archives and History, believes traditional disaster training should be reevaluated in light of Katrina. She recommends that it be more realistic and frequent” (Clareson and Long 2006, p.39). Similarly, Oliver (2006, p.20) in reflecting on how she handled a disaster revealed that she should have ensured she had a day of training for her volunteer staff so they would be better prepared. While Donahue and Tuohy (2006, p.5) also identified training and exercises as an important lesson they went further by pointing out the benefit of this. They state: “We spend a lot of time writing [After Action Reports] AAR’s, which gives us the sense that we learned lessons, but the lessons are not consolidated into a training regimen, and so we don’t actually learn them” (Donahue and Tuohy 2006, p.14). They add: “following the analysis through which lessons are identified and appropriate remedies understood, practice is required to inculcate new behavior” (Donahue and Tuohy 2006, p.14). They add to this lesson on the importance of training and practice, useful tips to achieve success in training. Donahue and Tuohy (2006, p.8) state:

Ultimately these weaknesses go unnoticed because actual plans are not trained fully or exercised realistically. Plans are often developed by mid-level managers. Senior managers and political officials may have the plan on their shelves, but get no formal training on what is in it or how to use it. Similarly, plans are not disseminated to supervisors or training academies. When the time comes for implementation, those on the front lines don’t know what the plan calls for.

This indicates then that training should be complete, senior managers should be included in the training and plans should be disseminated to key training personnel. Similarly, Jaeger, Langa, McClure and Bertot (2006, p.211) note that librarians should also be included in disaster training exercises. They state:

Provide public librarians with disaster preparedness, relief, and clean-up strategies. Librarians do not typically receive training in hurricane (or other types of disaster) preparedness. The ground zero preparations, plans, resources, and other activities that may occur prior to, during, and after a hurricane (or other disasters) are not well known among public librarians and are unlikely to be taught in schools of library and information science. Thus the state library, regional networks (such as SOLINET in the Southeast), and other organizations may need to rethink the need for such training, the frequency with which it is offered, and the various methods by which such training can be provided” (Jaeger, Langa, McClure and Bertot (2006, p.211).

While Donahue and Tuohy (2006, p.17) provide useful training tips their paper suggests that they are however aware of the challenge to implementing training. They note: “unfortunately funds available to sustain corrective action, training, and exercise programs are even leaner than those available for staff and equipment. Their recognition of this challenge highlights the need to identify creative ways of generating funds for training. Claeson and Long (2006, p.39) also recognized the importance of training and added another dimension to the discussion. They highlighted the importance of training content. They note: “Training needs to teach people critical thinking and flexibility, not just how to deal with artefacts and collections”. This is particular useful lesson especially given Young’s (2006) observation: “You never know what the next day is going to bring”. Based on the foregoing “the key to learning lessons is to improve the way we train and exercise. Most importantly, exercises must be recast as learning activities targeted at improving performance, not as punitive tests where failure is perceived as threatening an organization’s ability to garner funding” (Donahue and Tuohy 2006, p.18).

Lesson 4: Fluidity, Change & Flexibility

Fluidity, change & flexibility is also a recurring theme that can be used to categorize some of the lessons libraries have identified in the aftermath of natural disasters. According to Ellis (2007, p.111) “this storm taught us that disaster planning is a fluid process since we cannot accurately plan for the unknown. Incorporating the knowledge learned from each disaster is a must, but realizing that each disaster will have its own unique variables is also important to recognize before a disaster strikes”. Donahue and Tuohy (2006, p.10) add to the discussion by pointing out: “Learning is, at its core, a process of growth; thus a successful learning process requires a commitment to change. Organizational change is notoriously difficult, but particular challenges attend change in the emergency response arena”. They also highlight some challenges with change, notably:

Even following a major event, it is hard to sustain a commitment to change long enough to accomplish it. After an incident, it takes time to conduct an analysis and identify lessons. Washington D.C. and the public have very short time horizons; neither waits for these reports to move ahead. The government tends to focus on fast (and inexpensive) solutions – quick wins they can point to before public attention wanes. This kind of nearsightedness is inconsistent with meaningful change. By the time reports come out, there is no will (nor funding) to implement changes. By then, leadership has either turned over or moved on to something else. One local manager told us “We thought we did a lot of work with our politicians after the last major incident. But they have better things to

do. Five minutes after that incident is over, they're on to something else. There are a lot of gains to be made if they do well [managing a disaster], but an incident is a political flash in the pan for them" (Donahue and Tuohy 2006, p11).

This highlights the need to find creative ways to maintain the interest of politicians and other key players responsible for leading meaningful change. It also points to the need for leadership to engage the concepts continuity, long-term commitment and the long view in disaster planning and management.

Lesson 5: Partnerships

Partnership is also a recurring theme that can be used to categorize some of the lessons libraries have identified in the aftermath of natural disasters. Clareson's and Long's (2006, p.39) report revealed the need for more formal partnerships with municipal and state agencies and first responders. It also highlights the benefit of this to the information unit's disaster recovery efforts.

They note:

We had a good rapport with the local police department and state troopers so we were able to call upon them informally", Fauntleroy said. But museums really need to be integrated into local emergency management plan. Then we're not educating them on the importance of our collections at the last minute (Clareson and Long 2006, p.39).

Similarly Jaeger, Langa, McClure and Bertot (2006, p.209) highlight partnerships as an important lesson. They note: "The state library can also serve as a clearinghouse for disaster preparedness information, such as making libraries aware of good disaster plans, models for how local libraries can coordinate efforts with local government, and coordinating training related to disaster preparedness. In addition, the state library has the ability to coordinate library services during a hurricane with other state agencies". In a similar vein, Corrigan (2008, p.304) states:

Our experience appears to show that in the case of major disaster events libraries do not need their own individual pre-prepared disaster response plans as much as they need to be included in an overall general campus plan that makes effective use of a qualified disaster mitigation company. The reason is simple: in the event of an actual disaster, the type of equipment, expertise, and organization required (especially for library or other document salvage but also for critical building environmental control) is obviously far beyond what an individual library or even an individual institution could reasonably hope to continually prepare for...While library oversight and involvement is critical, much of the response itself is better left to the experts".

While partnerships and outside assistance may be good, Corrigan (2008, p.304-305) however warns:

Be wary of the quick fix, easier said than done but important nonetheless. Possible sources of assistance such as insurers, government agencies, and top level university administrators may have little understanding of the specific nuances of how libraries work: about assessing losses of collections or library equipment or staff; about the difficulty of replacing even recently acquired collections; about how even donated materials have significant costs associated with cataloging and physical processing; about the continuing importance of physical spaces to house library collections. A basic rule of thumb for library administrators in disaster-affected libraries might be to grab for opportunities, but test each one against how or whether it would benefit the institution as a whole two or three years down the road”.

While partnerships are good, Jaeger, Langa, McClure and Bertot (2006, p.210) note that reliance on outside help is not always good. They contend:

A further lesson is that public libraries may not be able to rely on immediate outside support after a disaster... A clear lesson from the affected communities during the 2004 and 2005 hurricane seasons is that public libraries should be ready to do as much as possible to help their communities survive and recover from a disaster without relying on immediate outside support from the federal government. As the federal government may or may not be prepared and able to help your community in the aftermath of a disaster, your library needs to be ready to do everything it can independently.

Therefore, while it useful for library staff to partner with their parent body as well as with organizations outside their institutions they will have to determine the level of partnership and the extent to which they will allow outside persons to steer their recovery efforts. The librarians will therefore need to balance independence with partnerships so that in the end the library and its user community benefits.

Lesson 6: Standby / Reserve Advantage

The advantage of a standby/reserve is also a recurring theme that can be used to categorize some of the lessons libraries have identified in the aftermath of natural disasters. According to Jaeger, Langa, McClure and Bertot (2006, p.211) library technology infrastructure is critical to disaster recovery and it should be protected to ensure operability.” There is therefore a need for server storage and also other forms of back-up systems. According to Corrigan (2008, p.304) “Backing up important electronic office data – excel files, word documents, etc. –will come in handy only if the backup copy is safe”. He adds “Encourage library personnel to save and store important

distributed documents to create multiple backups. He notes that because server storage alone can be vulnerable, one should back up the office PC by periodically copying files to a portable hard drive, which he notes is very cheap, is about the size of an average personal digital assistant (PDA) and is very simple to evacuate (Corrigan 2008, p.304). Young (2006, p.23) reporting on what he evacuated with notes: “My automation program was loaded on my laptop, so I was able to print out a “collection value” report if requested by insurance adjusters”. The foregoing suggests that having a standby/reserve provides the advantages of continuity and access to the library product / services.

Conclusion

The lessons categorized under the themes: information inventory & communication, resource acquisition, training, testing & practice, fluidity, change & flexibility, partnerships, and standby/reserve advantage, suggest planning, coordination, communications, resource management, situational awareness & analysis, and training & practice, provide useful observations for libraries as they plan for natural disasters. The similarities in some of the reports underscore the need for libraries to learn from the circumstances of other libraries. This paper is relevant to this need as it seeks to put forward a contribution to this disaster recovery literature with the hope that the library community being exposed to circumstances of other libraries will use this to guide their disaster recovery efforts. In this regard this paper seeks to answer the following question:

1. What lessons did the UWI Mona library observe from Hurricane Ivan in 2004?

Methodology

Qualitative data analysis is frequently interested in “eliciting the stories behind particular individuals or groups” (Bamberger 2000, p.15). This paper sought to elicit the story of the UWI Mona library and the lessons observed from Hurricane Ivan. Consequently, a qualitative approach was adopted. Case studies contribute to our knowledge of group and organizational related phenomena (Yin 2003, p.1). They also allow studies to retain the meaningful characteristics of organizational activities (Yin 2003, p.2). Therefore, case study was the particular qualitative method adopted to highlight the lessons the UWI Mona Library observed from the passage of Hurricane Ivan in 2004. It also has the additional advantage that it allows the

paper to retain the meaningful characteristics of UWI Mona Library's organizational activities, in particular, its disaster planning and response activities.

The literature was reviewed with the objective of identifying lessons reported. Using Strauss' (1987) "in-vivo coding" the lessons reported were coded. This involved selecting from the literature librarians' words or phrases that stood out as potentially significant for showcasing the lessons. These words / phrases were used as themes (same as codes/categories). The following themes emerged from the literature reviewed: information inventory & communication, resource acquisition, training, testing & practice, fluidity, change & flexibility, partnerships, and stand-by/reserve advantage.

Participant observation was also used to provide a description and a brief discussion of the lessons the UWI Mona library observed and the resultant strategies developed from these. In this regard, the preservation and conservation librarian at the UWI Mona library made extensive case notes on the lessons observed and the subsequent strategies that emerged from these lessons. The codes (themes) that emerged from the literature reviewed were then used to code the notes written by the preservation and conservation librarian on lessons observed and their subsequent strategies. In-vivo coding was also applied to facilitate any new themes (codes) that might emerge. There were however, no new themes. Guided by Patton (1990, p.423) the authors then went beyond the descriptive data to "attaching significance to what was found, offering explanations, drawing conclusions, extrapolating lessons, making inferences, building linkages, attaching meanings, imposing order". As such, the "comments" function of the word processor was used to write theoretical memos onto the relevant segments of the narratives (case notes) given by the conservation and preservation librarian.

Documents such as the UWI Mona's library's report on Hurricane Ivan; the Assessment Report on the UWI Library, Mona Campus after Hurricane Ivan; other internal documents as well as photographs taken of the damages to the physical infrastructure and the collections were used to complement the narratives from the participant observation. The codes (themes) that emerged from the literature reviewed were used to code the photographs and these were placed within the relevant sections of the text as a complement.

The Impact of Hurricane Ivan on Jamaica

Prior to Hurricane Ivan on September 10, 2004, the major disaster before then was Hurricane Gilbert of 1988. Hurricane Ivan, a category 5 hurricane caused major damage to the island. It was described as one of the most intense and the worst that had ever impacted the island. Figure 1 captures images of the destruction caused by Hurricane Ivan.



Fig.1: Impact of Hurricane Ivan on Jamaica
Source: PIOJ, ECLAC, UNDP (2004)

When Ivan struck the island on September 10, 2004, the projected population was 2.65 million (PIOJ, ECLAC, UNDP 2004, p. 7). Fourteen per cent of the total population or some 369 685 persons were directly affected by the natural disaster (PIOJ, ECLAC, UNDP 2004, p. 8). Seventeen persons lost their lives as a direct result of the hurricane; deaths occurred due to fallen trees, collapsed roofs, mudslides or persons being swept away by floodwaters; and there were another fourteen deaths indirectly related to the hurricane (PIOJ, ECLAC, UNDP 2004, p. 8). At the beginning of October there were at least 38 shelters still opened island wide, housing some 493 persons (PIOJ, ECLAC, UNDP 2004, p. 8). It has been estimated that an amount of JMD\$94.9 million, taken from the appropriate government institutions, was used for these relief activities (PIOJ, ECLAC, UNDP 2004, p. 6). Contributions from the international community estimated at JMD\$182.7 million provided additional and much needed support (PIOJ, ECLAC, UNDP 2004, pp. 6-7). Thus, a total of J\$277.6 million (or its equivalent of US\$4.5 million) was

used to meet the emergency requirements arising from the hurricane (PIOJ, ECLAC, UNDP 2004, p. 7).

The Impact of Hurricane Ivan on the UWI Mona Library

The impact was equally devastating for libraries in Jamaica; the UWI Mona library was no exception. Extensive flooding of the UWI Mona library as a result of the passage of Hurricane Ivan on Friday, September 10, 2004 resulted in serious infrastructural and collection damage. In the Main Library: the West Indies and Special Collection (WISC), the Humanities Collection, the Microfilm Collection, the Oversized books, the Maps and Atlases Collections were the worst damaged as these were on the Ground Floor. The entire floor was flooded with water rising to levels of seven inches in some sections. Figure 2 which follows captures one of the areas flooded.

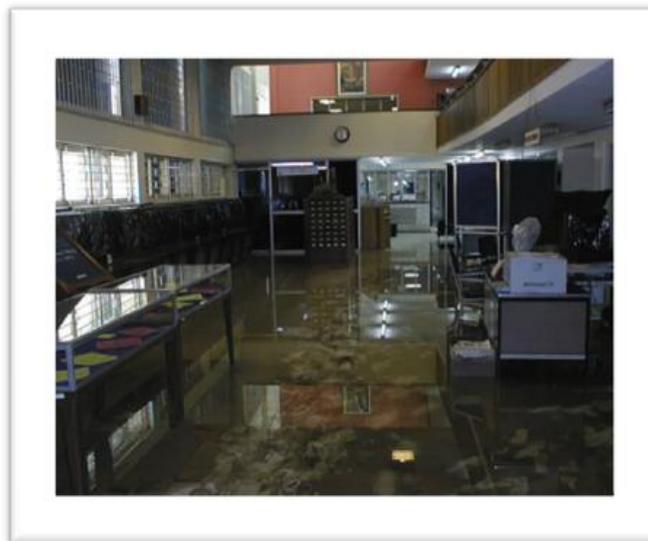


Fig.2 Catalogue Hall under water

This resulted in damages to 4,000 volumes from the WISC; 14,143 volumes from the Open Shelf Collection; 1,282 pamphlets from the WISC; 276 pamphlets from the Open Shelf Collection; 500 reels of microfilm; 100 boxes of microprints and microfiche cards. Some of the items damaged from the WISC were out of print and were irreplaceable. Figures 3 and 4 show images of some of the items that were damaged



Fig.3 Books damaged from Hurricane Ivan



Fig.4 Mildew books being restored

In the Science Branch Library, much of the damaged occurred in the Basement, where the older journal issues (1790-1989) were shelved. The manhole cover above the drain was forced by the water pressure and washed throughout the floor, dumping silt and soaking 7,700 bound and unbound volumes of scientific journals, which were shelved on the bottom shelves. Additionally, water came through the windows and window sills on the first floor, flooding the carpet in the periodicals reading area and the postgraduate carrels. On the second floor, a glass window was shattered and a few window storm shutters blew off, resulting in flooding of the area. There was no significant damage to the collection in the Medical Branch Library.

The replacement cost for these damaged items was estimated at: JMD37,910,557.20 or USD611,460.60. In addition to these costs, there were other costs, for example, clean-up costs and additional electricity used costs (September 19- October 15, 2004) as a direct result of the salvaging / rehabilitation exercise done post Hurricane Ivan. As a result of the damages, when the university re-opened September 20, 2004, the services offered to users were drastically reduced and some sections remained closed to facilitate the salvaging of water damaged books. Notwithstanding these negatives the event laid a valuable framework as to how the library planned and managed subsequent disasters, namely: tropical storm Nicole 2010 as well as Hurricanes Dean 2007 and Sandy 2012. While the event laid this valuable framework, this paper is limited in that it does not examine the nexus between the lessons observed from Hurricane Ivan and the resultant response to preparing for and managing these disasters, with a view to determining if in fact the belief that the management and response to these disasters were better is real or fantasy. This presents a subject for future research.

Lessons Observed from the Impact of Hurricane Ivan on the UWI Mona Library

The impact of any disaster, whether small or large, in libraries and information units, can have a severe impact on the quality of service, the collection and its physical infrastructure as well as the financial and human resources. This section highlights the lessons observed from Hurricane Ivan, 2004. The devastation resulted from this disaster provide useful lessons to guide future mitigation and prevention efforts. The literature earlier reviewed revealed a number of lessons, which were coded: (a) information inventory & communication, (b) resource acquisition, (c) training, testing & practice (d) fluidity, change & flexibility, (e) partnerships, (f) stand-by/reserve. Most of these themes (codes), which were found in the literature, were also found in the narratives and documents outlining the impact and the lessons observed from Hurricane Ivan. While there were no new themes, new sub-themes or dimensions of the themes emerged in some instances.

1. **Resource Acquisition.** *Having disaster management and recovery equipment on site is imperative.* While several resources were acquired, certain indispensable equipment and supplies for the salvaging and restoration aspects of a disaster were not included on the list of disaster management items procured; perhaps suggesting the magnitude of the possible impact of the disaster was not envisaged. The number of books and other items

that were wet and required drying highlighted the need for essential disaster restoration equipment and supplies to enhance the speed of the recovery process. Consequently, the following items were purchased post Hurricane Ivan: mobile drying racks, blotting paper for the fragility and significance of the books to be bound and the resultant need to upgrade the binding equipment and materials to facilitate the restorative work being done in a timely manner; HEPA filter vacuum cleaner to vacuum off mold; wet and dry vacuums to remove excess water; a drying rack and additional fans for air circulation; several cans of disinfectant spray to assist with the control of mold growth; interleaving paper / wax paper to sop wet pages; twine for outdoor and indoor drying of pamphlets; and clothes pins to secure some of the pamphlets being placed on lines to be dried. Figure 5, which follows captures this.



Fig.5 Air drying pamphlets in the court yard

In addition to the existing binding machine that is used in rebinding, a quick binding machine was purchased. Figures 6 and 7 which follow, show two of the resources acquired, post Hurricane Ivan, in use, in the salvaging and restoration processes.



Fig.6 Drying rack being used to dry a map that got wet from Hurricane Ivan



Fig.7 Quick binding machine

Without the purchase of these additional resources the length of the restoration and recovery of these items would have been greater. This brings to the fore the point made by Donahue and Tuohy (2006, p.8) in the literature that large-scale, long-duration incidents may demand more resources such as equipment, supplies, and commodities. This appeared to be the situation of the UWI Mona library where Hurricane Ivan, which was a large scale incident, demanded more resources. It was also noted that water alarms should be purchased and installed on ground level and below floors. This type of alarm

sounds both an audible alarm and a remote alarm through a telephone connection to alert staff to water on the floor. This system can provide an early warning of water and save the UWI Mona Library considerable sums in recovery costs. A number of items were water damaged and required drying. Given the likelihood of flooding, tropical storms and hurricanes, the library should consider the construction of a freezer and freeze-dry facility. This refrigeration equipment could be activated on a needs basis and could also be used as a means of flash freezing insect-infested library materials. The library could generate income from this resource by providing freeze-drying services to other libraries in Jamaica and the Caribbean. This resource is still yet to be acquired. While resource acquisition is not a new disaster preparedness activity, the specific items for inclusion were new additions to the disaster preparation and management procurement list for the UWI Mona Library and may serve as a caution to other libraries within the area to plan for possible salvaging and restoration as well. While planning for full salvaging may not be possible, at least money should be set aside and resources identified for same.

The alarm system and the freeze dry unit are yet to be procured because of funding and other factors. This is consistent with Donahue and Tuohy (2006, p.17) who had pointed out: “unfortunately funds available to sustain corrective action, training, and exercise programs are even leaner than those available for staff and equipment. This indeed suggests the need for the UWI Mona library to identify creative ways of identifying funds for the purchase of resources.

- 2. Training, Testing & Practice.** *Training, testing & practice in disaster preparedness is vital.* While the bindery staff is quite skilled in routine binding, after Hurricane Ivan it became apparent that substantial training in responsive conservation operation was needed. To this end, a staff training programme in conservation was initiated. This included components on book repair, binding and restoration. This training was also initially extended to staff in other sections of the library, who were co-opted to assist in the restorative activities. Figure 8 captures these staff members assisting in salvaging activities.



Fig.8 Non preservation staff engaged in salvaging wet books

Given the resultant need to control mold as well as the need to rebound items, training commenced in the following areas: how to assess, clean and treat mold infested items; and new/modern binding techniques. However, post Hurricane Ivan a sustained / regular training regimen is lacking. This brings to the fore Donahue and Tuohy (2006, p.14) observation that: “We spend a lot of time writing [After Action Reports] AAR’s, which gives us the sense that we learned lessons, but the lessons are not consolidated into a training regimen, and so we don’t actually learn them” (Donahue and Tuohy 2006, p.14). This points to the need for leadership to engage the concepts continuity and sustained long-term commitment in disaster training and practice.

Staff awareness was not directly mentioned in the literature that was reviewed but nonetheless emerged as a new sub-theme of training, testing & practice. A number of disaster awareness initiatives were introduced post Hurricane Ivan. These included:

- a. An introduction of a zero tolerance approach to items, (for example, files and documents) and equipment, for example central processing units (CPUs), being placed on the floors. This practice is not restricted to the hurricane season but is instead practiced all throughout the year to minimize the likelihood of items being soaked from flooding.

- b. The practice to shelve items on the bottom shelf was immediately discontinued in areas prone to flooding. The following figure, Figure 9, shows this.



Fig.9 Discontinuation of shelving on the bottom shelf

- c. An abundance of tarpaulin and garbage bags to cover shelves, computers and other resources are stored in the areas vulnerable to roof and window leaks. Each staff member within these vulnerable areas has the responsibility of ensuring that their areas are always covered with tarpaulin and/or garbage bags not only during the hurricane season but also during periods of possible heavy rains and flooding. The following figures, Figures 10 and 11 capture this.

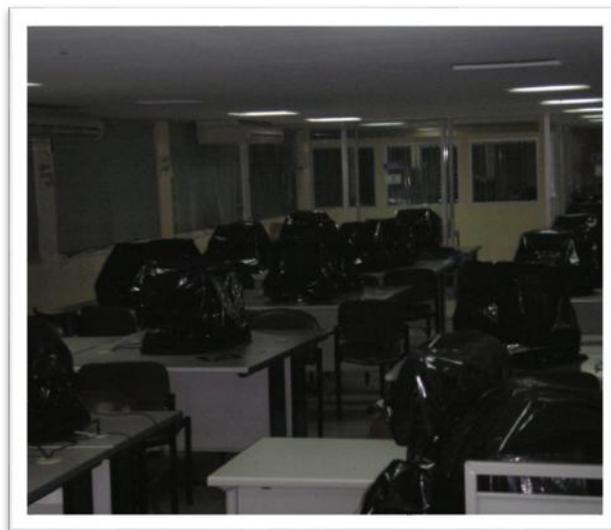


Fig.10 Using garbage bags to secure workstations



Fig.11 Using tarpaulin to secure shelves of books in the event the roof leaks

As a result of the damages incurred from Hurricane Ivan, staff members (including new staff) are now continuously made aware of these precautions that must be taken. A more sustained and formal training programme in conservation is however needed.

- d. Sandbags are also used in low lying areas prone to flooding, for example, the basement, in front of doors and on top of drains.



Fig.12 Using sandbags in a flood prone area

3. **Information Inventory & Communication.** *Information inventory & communication are important aspects of disaster preparedness.* Like the literature reviewed, two dimensions of this are highlighted, but these are: (a) preparing an inventory of important documents such as a disaster plan and contact information to facilitate communication & access and (b) preparing an inventory of the library's infrastructural resources. The latter brings a new dimension to theme, as the literature reviewed had highlighted preparing an inventory of the library's physical resources rather than infrastructural resources. After Hurricane Ivan the need to update the library's disaster manual to reflect the changes in policy and procedures became apparent. This was done to ensure currency and relevance of the initiatives geared at preparation, mitigation and restoration. The updates were communicated at the committee level and each committee member was expected to update the staff in their respective sections as well as ensure they understood the steps involved in an impending hurricane or tropical storm. Additionally, it also became evident that a quick ready reference disaster guide was needed to supplement the disaster manual. Consequently, two supplementary disaster related documents were introduced. These were: the Disaster Telephone Tree and the Emergency Guideline handbook, as per Figure 13 which follows.

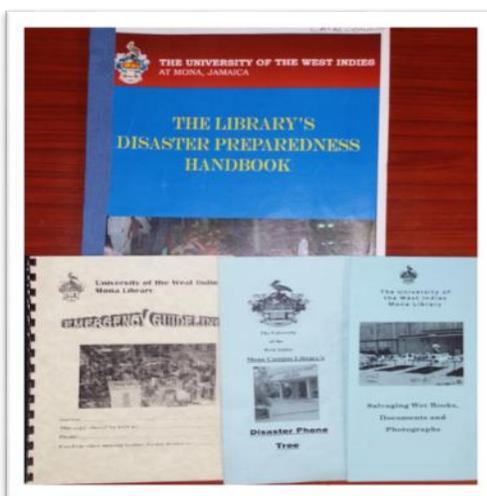


Fig.13 The Library's Disaster Preparedness Handbook and the Emergency Guideline Handbook

The Disaster Telephone Tree provided full and current contact details for all relevant persons to be contacted in the event of a disaster. This brings to fore Ellis' (2007, p.110), Oliver's (2006, p.20) and Claerson's and Long's (2006, p.39) works, which highlighted the need to have current contact information as an important lesson observed. The Emergency Guideline

Handbook is an abbreviated version of the Disaster Manual. In this regard it provides a quick summary of the steps to follow in the event of an emergency. Initially, one printed copy of each document was available in each section. However, this was found somewhat restrictive. Consequently, these documents are now available in electronic format, to increase access, widen staff awareness, and encourage staff reading at their disposal.

Preparing an inventory of the library's infrastructural resources was also highlighted as a dimension of information inventory & communication. Over the years, the library has experienced financial difficulties causing neglect in a few key areas of the building. Some of these areas became vulnerable during Hurricane Ivan. It became evident that these areas needed urgent attention. Consequently, the library realized the importance of embarking on a phased improvement of these areas, namely: roof repairs and the installation of accordion shutters to the entrance of each library and to windows and doors to combat wind-driven effects of rain, which contributes to flooding in the library. Notwithstanding, new areas for roof repairs have emerged over the period of renovating and these have been tabled for attention.

4. **Partnership.** *Partnerships can be valuable.* The impact of Hurricane Ivan saw a further deepening of partnerships at the local and international levels. Given the magnitude of the damage resulting from Hurricane Ivan, help was sought from experts in disaster management. At the corporate level, the UWI Mona Library partnered with a graduate from UWI who made arrangements for the library to access a freezer facility to freeze-dry books and other items that were substantially water damaged. Without the partnership that led to the use of the freezer-dry facility, the library would have lost far more items. Figure 14, which follows highlights this.



Fig.14 Books in freeze-dry facility

On the international level, the library partnered with John Dean, Preservation/Conservation Consultant, Cornell University, New York. This partnership proved equally valuable as his expertise in conservation restorative operations informed much of the library's restoration efforts including training and practice. For example, he created a dehumidifying chamber, which was used to reduce mold growth. See Figure 15, which follows.

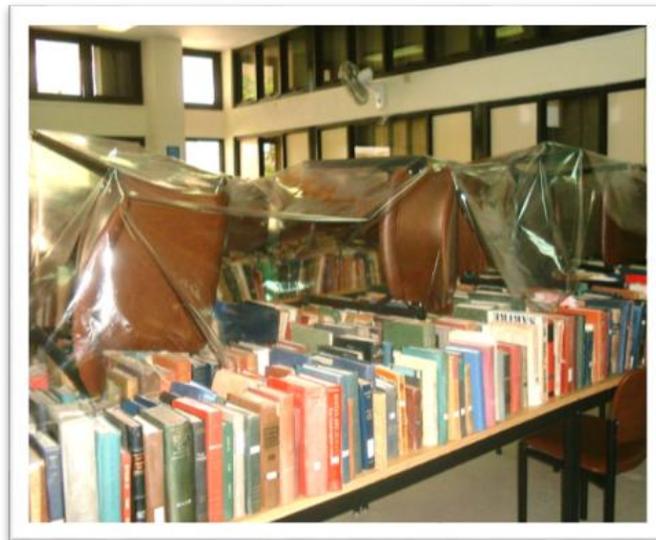


Fig.15 Dehumidifying chamber built as a result of the partnership with John Dean, Preservation/Conservation Consultant, Cornell University, New York.

The partnership also led to the attachment of key bindery personnel at Cornell University to further their knowledge of conservation restorative operations. He also provided advice on the procurement of specialized equipment needed in the restoration process. Further, this partnership experience has informed the library's subsequent training sessions, in disaster planning, provided to other libraries and departments on and off the campus. The benefits of partnership to the UWI Mona library are therefore consistent with Corrigan's (2008, p.304) and Claeson's and Long's (2006, p.39) views on the value of partnerships.

Conclusion

A number of lessons in disaster recovery were observed from the impact of Hurricane Ivan, namely: the importance of the acquisition of essential disaster preparedness equipment and especially, recovery equipment; sustained training, testing & practice; current information inventory & communication; and the value in local and international partnerships. As a result of these lessons observed, there has been a shift in how the UWI Mona library views hurricanes; consequently, the extent of the physical, infrastructural and financial damages seen in 2004 has never been seen again. Whether this is as a direct result of the lessons observed being learnt or the result of other factors could be a topic for further enquiry. It is interesting to note the similarities between the lessons observed in a developing country in the Caribbean such as Jamaica vis à vis countries in the developed world. This raises questions on the extent to which the library community has learnt from the lessons they have observed. According to Donahue and Tuohy (2006, p.11) "One chief told us, "There [are] no teeth in lessons from someone else's experience. We don't really learn from others unless we can really imagine ourselves in that other person's circumstance" Donahue and Tuohy (2006, p.11). However:

For the nation to improve response overall, the emergency response community has to be able to learn from all of these events. This calls for organizations to think of their experiences collectively, and be willing to learn from each other. But it can be difficult for agencies to perceive the experience of others as relevant to their own responsibilities and operations, and it can be hard to prioritize these lessons over the daily problems an agency confronts in its own jurisdiction (Donahue and Tuohy (2006, p.11).

To a large, this is a valid observation and indicates that indeed there are some real challenges. This raises the question -- where then should the library community go from here -- amidst the challenges in learning from the experiences of others, the challenges in perceiving the

experiences of others as relevant to one's own situation, and the risks associated with ignoring the experiences of others? This presents another topic for further research. It also raises the question - Will a presentation of a Jamaican / Caribbean perspective enable other Jamaican / Caribbean libraries to imagine themselves in the UWI Mona library's circumstance, especially given the geographical and cultural similarities? The highlights of the lessons observed by the UWI Mona library presented herein sought to achieve this.

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