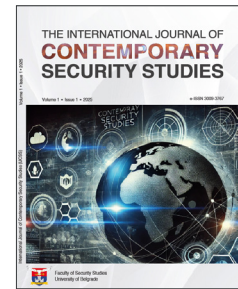


Faculty of Security Studies, University of Belgrade
**International Journal of Contemporary
Security Studies (IJCSS)**



Disaster Risk Management in Academic Institutions: An Assessment of Preparedness and Recovery at Kashim Ibrahim Library, Nigeria

Dada Kayode Sunday John^{1*}, Hafsat Aliyu Mohammed¹, Romoke Opeyemi Quadir²

¹ University Library, Federal University of Education, Zaria, Kaduna State, Nigeria; kayodescholar@gmail.com (D.K.S.J); hafsataliyu82@gmail.com (H.A.M);

² Kashim Ibrahim Library, Ahmadu Bello University, Zaria, Kaduna State, Nigeria; opeyemiquadir.oq@gmail.com (R.O.Q);

* Correspondence: kayodescholar@gmail.com; tel.: (+234)7030066180

Received: 20 March 2025; Revised: 15 May 2025; Accepted: 25 May 2025; Published: 30 June 2025

ABSTRACT

This study evaluates the disaster preparedness and recovery strategies at Kashim Ibrahim Library, Ahmadu Bello University, Zaria. A quantitative research methodology was adopted, specifically the survey research method, using a total enumeration sampling technique with 25 library assistants, 20 library officers, and 15 supportive staff from all the librarians involved in preservation and maintenance at Kashim Ibrahim Library, Ahmadu Bello University, Zaria, Kaduna State, Nigeria serving as the sample. A 4-point Likert scale, closed-ended, structured questionnaire titled “Disaster Preparedness and Recovery in Academic Library Questionnaire (DPRALQ)” was used to collect data. The data collected were analysed using descriptive statistics, including frequency distribution tables, percentages, means, and standard deviations. Findings from the study indicate inadequate disaster preparedness due to the absence of modern fire suppression systems (mean = 3.15), limited flood mitigation measures (mean = 3.30), inadequate funding (mean = 3.50), and a lack of staff training in disaster response (mean = 3.33). Based on the study’s findings, it is recommended that advanced disaster prevention technologies be adopted, regular staff training conducted, and a shift toward digital resources be made to enhance recovery capabilities.

KEYWORDS

Disaster preparedness, recovery, information resources, academic library, Kashim Ibrahim Library.

1. Introduction

Libraries, as repositories of intellectual and cultural heritage, play a pivotal role in preserving knowledge for current and future generations. However, their collections—comprising print, non-print, and electronic resources—are vulnerable to disasters such as fires, floods, pest infestations, and technological failures (Ngulube & Magazi, 2022). Ilo, Nkiko, Izuagbe and Furfuri (2020) opined that libraries are indispensable institutions charged with the responsibility of promoting literacy and quality education at all levels in Nigeria. This fact underscores the importance of having well-stocked libraries with resources to support teaching and learning. This is essential for the continuous use of library collections by students, staff, researchers, and other information users and is one of the primary reasons for proper care and preservation to ensure sustainability.

Unfortunately, the growing trends of deterioration and destruction necessitate proactive measures for preservation and conservation against disasters, which may occur due to environmental, biological, technological, and human factors that can cause irreparable damage to information resources in library holdings. Disaster preparedness and recovery are critical components of library management, ensuring the protection of resources and the continuity of services. This explanation provides a detailed overview of these concepts within the library context, focusing on definitions, components, strategies, and challenges supported by recent literature.

Academic libraries are critical repositories of knowledge, preserving intellectual and cultural heritage for current and future generations (Alegbeleye, 2019). The Kashim Ibrahim Library, established in 1962 at Ahmadu Bello University, Zaria, is one of Nigeria's largest academic libraries, housing an extensive collection of print, non-print, and electronic resources (Ahmadu Bello University, 2020). However, these resources are vulnerable to disasters such as fires, floods, and biological degradation, exacerbated by environmental and infrastructural challenges in tropical regions (Oluwaniyi, 2020).

Disaster preparedness involves proactive measures to protect library collections, while recovery focuses on restoring access to resources after a disaster (Ngulube & Magazi, 2022). The lack of adequate disaster management strategies in African libraries often results in significant losses (Aziagba & Edet, 2018). This study assesses Kashim Ibrahim Library's preparedness for disasters and its recovery mechanisms, drawing on recent literature and empirical data.

Kashim Ibrahim Library faces risks from natural and human-induced disasters, including floods, fires, and pest infestations, which threaten its extensive collections (Echezona & Ugwuanyi, 2021). Preliminary observations suggest inadequate disaster preparedness, such as outdated fire safety systems and limited flood defences, compounded by insufficient staff training (Abubakar & Musa, 2023). Without robust strategies, the library risks incurring irreversible damage to its resources, thereby hindering its ability to support academic and research activities.

The primary objective is to assess the disaster preparedness and recovery strategies at Kashim Ibrahim Library. Specific objectives include:

1. Identifying available disaster prevention measures in the library.
2. Examining the causes of vulnerability to disasters.
3. Evaluating Barriers to Effective Disaster Preparedness and Recovery.

2. Literature Review

Concept of Disaster Preparedness and Recovery

Oluwaniyi (2020) views disaster preparedness in libraries as encompassing policies, equipment, and training to mitigate risks, while recovery involves restoring damaged resources and resuming services (Ngulube & Magazi, 2022). In Nigeria, academic libraries often lack comprehensive disaster plans due to funding constraints and low prioritisation (Aziagba & Edet, 2018). Effective preparedness requires modern fire suppression, flood barriers, and pest control, alongside digital backups for recovery (Oluwaniyi, 2020).

Disaster preparedness in libraries refers to the proactive measures, policies, and infrastructure designed to prevent or mitigate the impact of disasters on collections and services (Aziagba & Edet, 2018). It encompasses planning, equipping, and training to anticipate and manage risks. According to Ngulube and Magazi (2022), preparedness involves identifying potential threats—natural (e.g., floods, earthquakes) or human-induced (e.g., fires, vandalism)—and implementing strategies to minimise damage. The goal is to safeguard physical and digital resources, maintain access, and protect the library's role as an academic and cultural hub.

Key components of disaster preparedness include:

- Risk Assessment: Libraries must be able to identify vulnerabilities, such as environmental factors (high humidity) or infrastructural weaknesses (outdated fire systems) (Abubakar & Musa, 2023).
- Disaster Planning: Libraries Management must develop a comprehensive disaster management plan outlining prevention, response, and recovery protocols (Yaya & Opeke, 2019).

- Preventive Infrastructure: Library Management must ensure the installation of equipment such as fire suppression systems, flood barriers, and humidity controllers to reduce risks (Oluwaniyi, 2020).
- Staff Training: Library Staff and personnel should be given access to training programmes for skills development to respond to emergencies, such as fire evacuation or salvage of damaged materials (Aziagba & Edet, 2018).

Disaster Recovery

Disaster recovery focuses on restoring library resources and services after a disaster occurs (Ngulube & Magazi, 2022). It involves assessing damage, salvaging affected materials, and resuming operations to ensure continuity. Echezona and Ugwuanyi (2021) define recovery as a multi-stage process that includes immediate response (e.g., stabilising wet books), restoration (e.g., repairing or digitising damaged items), and long-term planning to prevent recurrence. Recovery is closely tied to digital preservation, as electronic backups facilitate faster restoration of access compared to physical repairs (Oluwaniyi, 2020).

Key components of disaster recovery include:

- Damage Assessment: Libraries must evaluate the extent of loss to prioritise salvage efforts (Abubakar & Musa, 2023).
- Salvage and Restoration: The Kashim Ibrahim Library utilises techniques such as freeze-drying for wet materials and digitising damaged documents to preserve content in its holdings (Ngulube & Magazi, 2022).
- Service Restoration: With staff trained on re-establishing access through temporary facilities or digital platforms, this will help salvage restoration as soon as possible, allowing users to utilise the library facility (Yaya & Opeke, 2019).
- Post-Disaster Review: Librarians who are equipped with analysis strategies in case of disaster's impact to improve future preparedness (Aziagba & Edet, 2018).

Disaster preparedness and recovery are essential for several reasons:

- Preservation of Heritage: Libraries house irreplaceable materials, such as rare manuscripts and archival records, which require protection to maintain cultural and intellectual value (Alegbeleye, 2019).
- Continuity of Services: Academic libraries support teaching, learning, and research, and disruptions can hinder institutional goals (Yaya & Opeke, 2019).
- Cost Efficiency: Preventive measures and effective recovery reduce the financial burden of replacing lost collections (Ngulube & Magazi, 2022).
- User Trust: A resilient library fosters confidence among users, ensuring continued engagement (Oluwaniyi, 2020).

The studies reviewed offer valuable insights into disaster risk management, water scarcity adaptation, technological advancements, institutional decentralisation, the socio-economic impacts of disasters, and disaster risk reduction (DRR). These findings have significant implications for the Kashim Ibrahim Library at Ahmadu Bello University, Zaria, as a key information hub that can support disaster preparedness, community resilience, and institutional collaboration in the context of flood risk and other environmental challenges.

2.1. Role as a Knowledge Dissemination Hub

Ivanov (2024) emphasises the potential of libraries as critical hubs for disseminating disaster risk reduction (DRR) knowledge and supporting community resilience. The Kashim Ibrahim Library can leverage its resources to bridge information gaps by **Curating Resource for** development of a dedicated section for DRR, including digital and print materials on flood risk management, early warning systems, and climate adaptation strategies, drawing from studies like Cvetković and Martinović (2021). Also, Kashim Ibrahim Library can organise in house workshops, seminars, and exhibitions to educate students, faculty, and local communities about NDRP, innovative flood management solutions and traditional adaptation practices, and provision of **Digital Platforms for** access to online platforms for real-time disaster information, aligning with Ivanov's (2024) rec-

ommendation for data-driven risk assessments and public awareness as highlighted by Chakma *et al.* (2021) and NEMA (2025).

Ilo, Nkiko, Izuagbe, and Furfuri (2020) examined librarians' perceptions of disaster preparedness and its effect on the practical preservation and conservation of library resources, focusing on university libraries in the Southwest geopolitical zone of Nigeria. Their study employed a survey research design to collect data using a total enumeration technique from a randomised ballot system administered to the respondents. Their population consisted of 327 librarians and library officers drawn from federal and state university libraries in the region. They collect data using questionnaires and interview methods. They reported that the preservation and conservation of information resources could be more effective if disaster preparedness measures were incorporated into library services and processes, and the use of core digital preservation strategies, which are not currently practised in university libraries, was employed to preserve library collections. They recommended that efforts be aimed at all forms of preservation strategies to ensure the longevity and sustainability of all information resources in the libraries.

Osawele and Akpukpu (2024) investigated the impact of librarians' perceptions of disaster management in university libraries in the South-South region of Nigeria. Two research questions and one research hypothesis were raised, answered and tested. A descriptive survey research design employing a correlational approach was adopted for the study, targeting a population of 402 respondents. Their study employed a total enumeration sampling technique, using a questionnaire titled "Questionnaire on the Impact of Librarians' Perception towards Disaster Management in University Libraries in South-South, Nigeria (Q ILPDMULSSN)" for data collection. The data collected were analysed using descriptive statistics in the form of percentages and frequency counts, as well as the statistical mean ($\bar{x}$) and standard deviation (SD). Their findings revealed that disaster management in university libraries in the South-South, Nigeria, which includes disaster recovery, assists in restoring damaged equipment and physical buildings, as well as helping to return lives to normalcy ($\bar{x} = 3.34$, $SD = 0.08$), is positive. The findings also revealed that librarians' perceptions regarding disaster management, which include disaster management, are too broad for university libraries to undertake alone ($\bar{x} = 3.14$, $SD = 0.07$, in university libraries in south-south Nigeria, are positive. They recommended that librarians take the practice of disaster management seriously to protect library buildings and resources from disasters.

2.2. Supporting Technological Integration

Hanspal and Behera (2024) emphasise the role of emerging technologies, including AI, GIS, and drones, in disaster management. The Kashim Ibrahim library can **provide Access to Tools** to offer access to GIS software, AI-driven predictive models, and databases for disaster management research, enabling students and researchers to explore technology-driven solutions and provision **Training Programs to enhance** collaboration with university departments to offer training on using technologies for hazard mapping, damage assessment, and resource optimisation, as demonstrated in case studies like the 2018 Kerala floods and **Research Support to** Facilitate access to case studies and literature on technological applications in disaster management, supporting academic and practical advancements in the field.

2.3. Promoting Community-Based Adaptation

Chakma *et al.* (2021) emphasise the importance of local adaptation strategies in addressing water scarcity among tribal communities. The Kashim Ibrahim library can **Document Local Knowledge** to Collect and preserve indigenous knowledge on water management practices, such as the construction of small dams (Godha) or wells (Shillaw hoo), for academic and community use, engagement of **Community for** Partnering with local communities in Zaria to disseminate information on sustainable water management and climate adaptation, fostering resilience against environmental challenges, and provision of **policy advocacy for** policymakers with access to studies like Chakma *et al.* (2021) to inform adaptation policies that enhance local communities' capacity to cope with water scarcity and floods.

2.4. Strengthening Institutional Collaboration

Dada (2016) conducted research on the preservation of information resources in the Federal College of Education, Zaria, with three research objectives. Data collected from the respondents using a four-point rating scale on the preservation levels from the library staff revealed that improper ventilation, poor network, and lack of proper shelving are causes of deterioration and lack of professional librarians in charge of preservation is a factor, with recommendations that there is need for installation of modern ventilators, proper training with ICT skills in preservation and maintenance of library collections.

Oyeniran (2023) evaluated disaster management practices in selected University libraries in Nigeria. The descriptive design survey was adopted for the study. Their study covered federal and state university libraries in South-West Nigeria. Method: The study population consisted of all librarians from the federal and state university libraries in the studied area. Their study employed the total enumeration sampling technique, which involves studying the entire population. Five research questions guided the study. Questionnaires were used to collect data from the respondents. The data generated for the study were analysed using descriptive statistics, including percentages, means, and frequency counts. Results: It was discovered that perceptions of librarians vary on disaster management practices. They revealed that problems encountered in disaster management include a lack of disaster preparedness plans, inadequate funding allocation to libraries, and inadequate disaster facilities and modern Technological equipment. Their study identified strategies for effective disaster management in university libraries in Nigeria. They recommended strategies, including the development of a disaster preparedness plan, regular surveillance to prevent theft and mutilation of library books, vulnerability analysis and risk assessment to evaluate the types of emergencies that might affect the library collection, staff training, and raising awareness of the need to protect documents from disasters. Their study recommends that libraries establish adequate disaster preparedness plans to guide librarians and users in managing disasters, along with providing training for librarians and other staff on disaster control and prevention. Additionally, it suggests that libraries should receive adequate funding from their parent institution and the government.

Mokhele (2024) notes the challenges of decentralisation in disaster management, including coordination gaps and resource disparities. The Kashim Ibrahim Library can **Facilitate Interagency Collaboration** to Serve as a neutral platform for stakeholders, including municipal authorities, disaster management agencies, and NGOs, to access and share resources on standardised disaster management guidelines, **Support Policy Research through the provision of** access to legislative frameworks like the Disaster Management Act (Mokhele, 2024) and studies on institutional capacity to support research on improving disaster management structures, and advocacy for access to **Resource Equity** to disaster management resources by making relevant literature and data available to under-resourced municipalities and institutions.

2.5. Addressing Socio-Economic Impacts

Ogunleye and Arohunsoro (2024) highlight the socio-economic hardships caused by rainstorms and the need for long-term mitigation measures. The Kashim Ibrahim Library can disseminate information on low-cost mitigation strategies, such as stormwater drainage systems and wind-break vegetation, to local communities in Zaria, provision **Relief Coordination for** Partnering with emergency management agencies to provide data and resources for assessing socio-economic impacts of disasters and planning relief efforts, and maintain a repository database of studies on disaster impacts and coping strategies to support academic research and practical interventions in northern Nigeria.

2.6. Enhancing Preparedness and Resilience

Cvetković and Martinović (2021) identify untapped potential in innovative solutions for flood prevention, preparedness, and civil protection. The Kashim Ibrahim Library can promote awareness of early warning systems by providing access to studies and tools for flood risk assessment, supporting proactive disaster management, development or curation of training materials on flood preparedness, communication, and cooperation tailored to the needs of practitioners and local communities, and creation of a database of innovative flood management solutions identified in the DAREnet knowledge base, making it accessible to researchers, policy-makers, and practitioners.

The Kashim Ibrahim Library is uniquely positioned to address the challenges of flood risk management, water scarcity, and disaster preparedness in Zaria and beyond. By leveraging its role as an information hub, the library can support technological integration, community-based adaptation, institutional collaboration, and socio-economic resilience. Implementing these strategies will enhance the library's contribution to academic research, community empowerment, and proactive disaster management, aligning with the findings of the reviewed studies.

Library as a Public Disaster Risk Reduction (DRR) Resource Center

Disaster preparedness, preservation, and conservation of information resources are key to the survival of academic libraries and the resources they support, which in turn support education. Disaster management in university libraries is undertaken by librarians to rescue information resources, library buildings and other related materials such as computers, printers, scanners, photocopiers and furniture, which include students reading tables and chairs, staff office tables and chairs, shelves, trolleys and binding equipment, which are essential for the development of the academic system from disasters (Osawele & Akpukpu, 2024).

Librarians' roles are crucial for the preservation and conservation of resources for disaster risk reduction. Though libraries are established with the objectives of supporting teaching and learning and in line with the parental goals and objectives, they must act as resource centres for other information centres to learn from using case studies of two (2) libraries gutted by fire disaster, the University of Jos two campus libraries' whole collection in 2013 and 2016 (Echezona, Ugwu, and Ozioko, 2012; Nwokedi, Panle & Samuel, 2017). According to Echezona, Ugwu, and Ozioko (2012), perceptions of libraries and librarians on disaster are very rare in disaster preparedness; this is why most academic institution stakeholders, decision makers and management place preparedness activities at the bottom of their priority list due to lack of awareness on the need for preparation for emergency preparedness in the campuses libraries (Merikle & Smilek, 2001; Nwokedi, Panle & Samuel, 2017; Abareh, 2014; Echezona, Ugwu & Ozioko, 2012).

This view is also supported by a study by Ilo, Nkiko, Izuagbe and Furfuri (2020), who examined librarians' perception of disaster preparedness and its effect on the practical preservation and conservation of library resources; they reported that librarian's perception of disaster preparedness is low due to financial, technical and other considerations and also librarians perceive that disaster rarely occurs in libraries like in other organisations. From a digital disaster perspective, Zaveri (2015) noted that over 50% of librarians are less than 20% sure that digital disaster is possible in libraries as against the 7.61% of librarians who are 60% probabilistic about disaster occurrence in libraries, revealing that libraries in Nigeria must ensure most of their collections is digital preserve in the cloud in case of fire outbreaks/disasters.

This places the libraries at the forefront of ensuring proper advocacy and awareness programmes must be put in place through partnership with the National Emergency Management Agency (NEMA) and incorporation of the Federal Emergency Disaster Declaration of the 1999 Constitution and National Disaster Response Plan (NDRP) for response to imminent invasion, breakdown of public order including natural disasters or other existential threats, activation, coordination and mobilisation of responsive to emergencies.

The National Disaster Response Plan (NDRP) is a document prepared by researchers and experts from various fields in disaster management. The document has been approved by the Federal Executive Council (FEC) as a policy guideline for a period of two years for disaster management in Nigeria. NDRP provides a framework for all inter-agency, intergovernmental emergency preparedness, planning, training, exercising, coordination, and information exchange for response, recovery, and support (NEMA, 2025).

Response activities, as outlined by NEMA (2025) in the NDRP, include direction, control, early warning, evacuation, and emergency services for the immediate and short-term effects of an emergency or disaster.

Recovery encompasses the restoration of critical services through both short-term and long-term activities, providing essential needs such as temporary housing, food, and reconstruction of damaged areas within the community. In contrast, the support services stipulate the importance of the mission, policies of agencies and support agencies to supplement state and local government activities, which include transportation, communication, fire fighting, mass care, resource support, food and water, military/police support, search and rescue and information and planning for efficiency and smooth operations (NEMA, 2025).

Libraries must place awareness programmes through outreach services on the campuses for every individual to be aware of NDRP as most information users do not know that such policies exist in case of emergencies; librarians must be strong advocates for information sharing via different platforms to share NDRP Policies to enlighten the university community through talk shows, symposiums and seminars.

3. Strategies for Disaster Preparedness

3.1. Risk Assessment and Planning

Libraries must conduct regular risk assessments to identify vulnerabilities specific to their environment. For instance, in tropical regions like Nigeria, high humidity and flooding are prevalent risks (Echezona & Ugwuanyi, 2021). A disaster management plan should outline the following:

- Potential threats and their likelihood.
- Roles and responsibilities of staff during emergencies.
- Communication protocols with stakeholders, such as university management or emergency services (Abubakar & Musa, 2023).

3.2. Preventive Infrastructure

Investing in modern equipment is critical. Examples include:

- **Fire Suppression Systems:** Clean agent systems (e.g., FM-200) extinguish fires without damaging materials, unlike water-based sprinklers (Ngulube & Magazi, 2022).
- **Flood Mitigation:** Automatic flood barriers and improved drainage systems protect against water damage (Echezona & Ugwuanyi, 2021).
- **Environmental Controls:** Dehumidifiers and air conditioners maintain optimal conditions (40–55% relative humidity, 18–22°C) to prevent biological deterioration (Oluwaniyi, 2020).

3.3. Staff Training and Awareness

Training programs equip staff with skills to prevent and respond to disasters. Workshops on fire safety, pest management, and salvage techniques, combined with simulation drills, enhance preparedness (Aziagba & Edet, 2018). Continuous professional development, such as attending conferences or accessing online courses, keeps staff updated on global best practices (Yaya & Opeke, 2019).

3.4. Digital Preservation

Digitising collections and maintaining robust backups reduce reliance on vulnerable physical resources. Cloud-based storage and offline backups ensure data recovery in the event of a disaster (Oluwaniyi, 2020). Metadata standards, such as Dublin Core, facilitate efficient retrieval of digital content (Ngulube & Magazi, 2022).

4. Strategies for Disaster Recovery

4.1. Immediate Response

Following a disaster, libraries must act swiftly to stabilise their collections. For example:

- **Wet Materials:** Freeze-drying or air-drying prevents mould growth (Ngulube & Magazi, 2022).
- **Fire-Damaged Items:** Cleaning soot and assessing structural integrity is critical (Abubakar & Musa, 2023).
- **Digital Systems:** Restoring access through backups or temporary servers ensures continuity (Oluwaniyi, 2020).

4.2. Restoration and Conservation

Restoration involves repairing or replacing damaged materials to restore the property to its original condition. Libraries may:

- Engage conservators to repair rare books or manuscripts.
- Digitize partially damaged items to preserve content (Echezona & Ugwuanyi, 2021).
- Replace non-unique items through interlibrary loans or purchases (Yaya & Opeke, 2019).

4.3. Service Continuity

Temporary facilities or digital platforms can maintain services during recovery. For instance, providing access to e-resources via remote servers ensures that users are not entirely cut off (Oluwaniyi, 2020). Communication with users about service disruptions and recovery timelines is also essential (Aziagba & Edet, 2018).

4.4. Post-Disaster Evaluation

A review of the disaster's impact informs future preparedness. Libraries should:

- Document losses and response effectiveness.
- Update disaster plans based on lessons learned (Ngulube & Magazi, 2022).
- Seek funding for recovery through grants or institutional support (Yaya & Opeke, 2019).

4.5. Causes of Vulnerability to Disasters

Environmental factors, such as high humidity and temperature, accelerate resource deterioration in tropical climates (Abubakar & Musa, 2023). Human factors, including improper handling and inadequate shelving, further exacerbate vulnerabilities (Echezona & Ugwuanyi, 2021). Additionally, outdated infrastructure, such as poor ventilation and lighting, increases risks of fire and biological damage (Yaya & Opeke, 2019).

4.6. Barriers to Effective Disaster Preparedness

Inadequate funding is a primary barrier, limiting the acquisition of modern disaster prevention tools (Aziagba & Edet, 2018). A lack of trained personnel and awareness among librarians hinders the development of effective response strategies (Ngulube & Magazi, 2022). Unfavourable government policies, such as high import duties on preservation equipment, further complicate efforts (Yaya & Opeke, 2019).

5. Methodology

A descriptive survey method was employed, targeting 60 library staff involved in preservation and maintenance at Kashim Ibrahim Library. The study employed a total enumeration sampling technique to select all librarians involved in preservation and maintenance at the Kashim Ibrahim Library, Ahmadu Bello University, Zaria, Kaduna State, Nigeria. This is in line with Sugiyono (2016) and Laerd's Dissertation (2018), which suggest that researchers can sample the entire population if the population size is not too large, thereby allowing the researcher to gather data from each respondent. The population consisted of 25 library assistants, 20 library officers, and 15 supportive staff members (Ahmadu Bello University, 2023). A structured questionnaire, "Disaster Preparedness and Recovery in Academic Library Questionnaire (DPRALQ)," was distributed and collected over three days. Data were analysed using SPSS 25, with results presented in frequency tables and weighted average mean scores. The researcher also conducted on-site observations to assess disaster preparedness infrastructure.

Results

Table 1. Available Disaster Prevention Measures

S/N	Item	SA	A	D	SD	Mean	Std.
1	Fire extinguishers are available and functional	10	20	25	5	2.50	0.912
2	Flood barriers are installed	5	15	30	10	2.17	0.874
3	Pest control measures are regularly implemented	15	25	15	5	2.83	0.897
4	Digital backups exist for critical resources	12	18	20	10	2.53	0.998
Cumulative Mean						2.508	
Decision Mean = 2.500							

The analysis in Table 1 reveals that pest control measures are the most effective disaster prevention strategy (mean = 2.83), aligning with Aziagba and Edet (2018), who note that pest control is often prioritised in Nigerian libraries due to the prevalence of biological threats, such as insects and rodents. The 66.67% agreement rate suggests regular implementation; however, the remaining 33.33% of disagreements indicate gaps in consistency or coverage, possibly due to funding constraints (Yaya & Opeke, 2019).

Fire extinguishers (mean = 2.58) and digital backups (mean = 2.53) both hover around the decision mean, reflecting marginal availability. The 50% agreement rate for fire extinguishers corroborates Ngulube and Magazi's (2022) findings, which highlight that many African libraries rely on outdated fire safety systems, thereby limiting their effectiveness. Similarly, the limited digital backups align with Oluwaniyi (2020), who notes the slow adoption of digital preservation in Nigerian libraries due to infrastructural and financial barriers. The high standard deviation for digital backups (0.998) suggests varied perceptions, possibly reflecting partial implementation for select collections (Abubakar & Musa, 2023).

Flood barriers are the least available measure (mean = 2.25), with 66.67% of respondents disagreeing, consistent with Echezona and Ugwuanyi (2021), who identify inadequate flood mitigation as a critical vulnerability in Nigerian libraries, particularly in flood-prone regions. The moderate standard deviation (0.874) indicates consensus on this deficiency, underscoring the need for infrastructural upgrades (Ngulube & Magazi, 2022). The cumulative mean (2.548) suggests that disaster prevention measures are marginally adequate, reflecting broader challenges in Nigerian academic libraries, where funding and infrastructure deficits hinder preparedness (Yaya & Opeke, 2019). The moderate to high standard deviations (0.874–0.998) indicate variability in perceptions, likely due to uneven implementation across the library's operations (Abubakar & Musa, 2023).

In summary, the average weighted mean analysis confirms a marginal agreement that disaster prevention measures are available at Kashim Ibrahim Library, with pest control being the most widely implemented and flood barriers the least. The cumulative mean of 2.548 underscores the need for comprehensive improvements to enhance preparedness, addressing the uneven implementation of measures to protect the library's collections.

Table 2. Causes of Vulnerability to Disasters

S/N	Item	SA	A	D	SD	Mean	Std.
1	High humidity and temperature	30	20	8	2	3.30	0.822
2	Outdated fire safety systems	25	22	10	3	3.15	0.875
3	Poor ventilation and lighting	20	25	12	3	3.03	0.854
4	Improper shelving and handling	18	28	10	4	3.00	0.863
Cumulative Mean						3.120	
Decision Mean = 2.500							

The analysis in Table 2 highlights high humidity and temperature as the most significant causes of vulnerability (mean = 3.30), consistent with Echezona and Ugwuanyi (2021), who note that tropical climates accelerate the deterioration of library materials through mould growth and paper brittleness. The high agreement rate (83.33%) and moderate standard deviation (0.822) underscore the consensus on this environmental challenge, particularly in Nigeria's northern region, where Kashim Ibrahim Library is located (Abubakar & Musa, 2023).

Outdated fire safety systems (mean = 3.15) are the second most critical factor, aligning with Ngulube and Magazi (2022), who emphasise that inadequate fire prevention increases the risk of catastrophic losses in African libraries. The 78.33% agreement rate suggests that respondents recognise the limitations of current systems, such as outdated extinguishers or lack of clean agent suppression, which are less damaging to collections (Oluwaniyi, 2020).

Poor ventilation and lighting (mean = 3.03) reflect infrastructural deficiencies, corroborating Abubakar and Musa (2023), who highlights how poor air circulation and improper lighting exacerbate biological and chemical deterioration. The 75% agreement rate indicates widespread acknowledgement of these issues, which contribute to humidity-related damage and increased fire risks (Echezona & Ugwuanyi, 2021).

Improper shelving and handling (mean = 3.00), while still significant, received the lowest mean score, suggesting it is perceived as less critical than environmental or infrastructural factors. This finding aligns with Aziagba and Edet (2018), who notes that human errors, such as overcrowding shelves or mishandling materials, contribute to physical damage but are often overshadowed by systemic issues, including funding and infrastructure. The 76.67% agreement rate indicates that staff training could mitigate this factor (Ngulube & Magazi, 2022). The cumulative mean (3.120) confirms that these vulnerabilities collectively pose a substantial risk, consistent with broader challenges in Nigerian academic libraries, where environmental and infrastructural constraints are prevalent (Oluwaniyi, 2020). The moderate standard deviations (0.822–0.875) across items suggest a relatively high level of consensus, reinforcing the need to address these issues.

In summary, the average weighted mean analysis confirms a strong agreement that high humidity and temperature, outdated fire safety systems, poor ventilation and lighting, and improper shelving and handling are significant causes of vulnerability at the Kashim Ibrahim Library. The cumulative mean of 3.120 underscores the need for targeted interventions to address environmental, infrastructural, and human factors, ensuring the protection of the library's collections.

Table 3: Barriers to Effective Disaster Preparedness and Recovery

S/N	Item	SA	A	D	SD	Mean	Std.
1	Inadequate funding	35	20	5	0	3.50	0.671
2	Lack of trained personnel	30	22	6	2	3.33	0.795
3	Poor infrastructural facilities	25	25	8	2	3.23	0.816
4	Limited digital preservation tools	20	28	10	2	3.10	0.803
Cumulative Mean						3.290	
Decision Mean = 2.500							

The analysis in Table 3 reveals that inadequate funding is the most significant barrier (mean = 3.50), aligning with Yaya and Opeke (2019), who note that Nigerian libraries allocate less than 5% of their budgets to preservation, thereby restricting investments in essential equipment such as fire suppression systems or dehumidifiers. This financial constraint limits the library's ability to address other barriers, such as infrastructure upgrades or training programs (Aziagba & Edet, 2018).

The lack of trained personnel (mean = 3.33) is the second most critical barrier, corroborating Abubakar and Musa (2023), who highlight insufficient preservation knowledge among librarians as a significant impediment to disaster response. The high agreement (86.67%) underscores the need for capacity-building programs, such as workshops or simulation drills, to enhance staff preparedness (Ngulube & Magazi, 2022).

Poor infrastructural facilities (mean = 3.22) reflect the challenges of outdated buildings and erratic power supply, as noted by Echezona and Ugwuanyi (2021). The 83.33% agreement rate suggests that stakeholders recognise the vulnerability caused by inadequate ventilation, lighting, and power systems, which exacerbate risks such as fire and biological deterioration (Abubakar & Musa, 2023).

Limited digital preservation tools (mean = 3.10) were still a significant barrier but received the lowest mean score, indicating slightly less consensus (80% agreement). This aligns with Oluwaniyi (2020), who emphasises the slow adoption of digital preservation in Nigerian libraries due to infrastructural and financial constraints. The reliance on print resources increases recovery challenges, as digital backups could facilitate faster restoration after a disaster (Ngulube & Magazi, 2022). The cumulative mean (3.290) confirms that these barriers collectively pose a substantial challenge, consistent with broader African library contexts where funding,

expertise, and infrastructure deficits are prevalent (Ngulube & Magazi, 2022). The low standard deviations (0.671–0.816) across items indicate a strong consensus among respondents, suggesting that these issues are widely acknowledged within the library.

In summary, the average weighted mean analysis confirms a strong agreement that inadequate funding, a lack of trained personnel, poor infrastructure, and limited digital preservation tools are significant barriers to disaster preparedness at the Kashim Ibrahim Library. The cumulative mean of 3.290 underscores the urgency of addressing these issues through collaborative stakeholder interventions to ensure the protection of collections and continuity of services.

6. Discussion

The analysis of Table 1 indicates that pest control measures are the most frequently implemented disaster prevention strategy at Kashim Ibrahim Library (mean = 2.83), aligning with Aziagba and Edet (2018), who note that Nigerian libraries often prioritise pest control due to the prevalence of biological threats, such as insects and rodents. The 66.67% agreement rate suggests regular implementation, but the 33.33% disagreement highlights gaps in consistency or coverage, likely due to funding constraints (Yaya & Opeke, 2019). This partial effectiveness underscores the need for enhanced pest management protocols to ensure comprehensive protection.

Fire extinguishers (mean = 2.58) and digital backups (mean = 2.53) hover around the decision mean (2.500), reflecting marginal availability. The 50% agreement rate for fire extinguishers corroborates Ngulube and Magazi's (2022) findings, which highlight that many African libraries rely on outdated fire safety systems, thereby limiting their effectiveness. The high standard deviation for digital backups (0.998) suggests varied perceptions, possibly due to partial implementation for select collections, as noted by Abubakar and Musa (2023). This limited digital preservation aligns with Oluwaniyi (2020), who points to slow adoption in Nigerian libraries due to infrastructural and financial barriers.

Flood barriers are the least available measure (mean = 2.25), with 66.67% of respondents disagreeing, consistent with Echezona and Ugwuanyi (2021), who identify inadequate flood mitigation as a critical vulnerability in Nigerian libraries, particularly in flood-prone regions. The moderate standard deviation (0.874) indicates consensus on this deficiency, emphasising the need for infrastructural upgrades (Ngulube & Magazi, 2022). The cumulative mean (2.548) suggests marginally adequate disaster prevention measures, reflecting broader challenges in Nigerian academic libraries where funding and infrastructure deficits hinder preparedness (Yaya & Opeke, 2019). The moderate to high standard deviations (0.874–0.998) indicate variability in implementation, likely due to uneven resource allocation across the library's operations (Abubakar & Musa, 2023).

Table 2 highlights high humidity and temperature as the most significant cause of vulnerability (mean = 3.30), consistent with Echezona and Ugwuanyi (2021), who note that tropical climates accelerate material deterioration through mould growth and paper brittleness. The high agreement rate (83.33%) and moderate standard deviation (0.822) underscore the consensus on this environmental challenge, particularly in Nigeria's northern region, where Kashim Ibrahim Library is located (Abubakar & Musa, 2023). This finding is related to the limited flood barriers in Table 1, as high humidity exacerbates water-related damage, necessitating environmental control measures such as dehumidifiers.

Outdated fire safety systems (mean = 3.15) are the second most critical factor, aligning with Ngulube and Magazi (2022), who emphasise that inadequate fire prevention increases the risk of catastrophic losses. The 78.33% agreement rate is directly linked to Table 1's marginal availability of fire extinguishers (mean = 2.58), confirming that outdated systems are both a cause of vulnerability and a gap in preparedness (Oluwaniyi, 2020). Poor ventilation and lighting (mean = 3.03) reflect infrastructural deficiencies, corroborating Abubakar and Musa (2023), and contribute to humidity-related damage and fire risks, as noted in the findings of Table 1 (Echezona & Ugwuanyi, 2021).

Improper shelving and handling (mean = 3.00) are perceived as less critical than environmental or infrastructural factors. This aligns with Aziagba and Edet (2018), who note that human errors contribute to physical damage but are often overshadowed by systemic issues. The 76.67% agreement rate suggests that staff training could mitigate this factor (Ngulube & Magazi, 2022). The cumulative mean (3.120) indicates that these vulnerabilities collectively pose a substantial risk, consistent with broader challenges in Nigerian libraries where

environmental and infrastructural constraints prevail (Oluwaniyi, 2020). The moderate standard deviations (0.822–0.875) reflect strong consensus on these issues.

Table 3 identifies inadequate funding as the most significant barrier (mean = 3.50), aligning with Yaya and Opeke (2019), who note that Nigerian libraries allocate less than 5% of their budgets to preservation. The 91.67% agreement rate and low standard deviation (0.671) indicate a strong consensus, which explains the limited availability of flood barriers and digital backups in Table 1, as well as the persistence of vulnerabilities, such as outdated fire systems, in Table 2 (Aziagba & Edet, 2018). This financial constraint is a root cause of other barriers, restricting investments in infrastructure and training.

The lack of trained personnel (mean = 3.33) is the second most critical barrier, corroborating Abubakar and Musa (2023), who highlight insufficient preservation knowledge as a significant impediment. The 86.67% agreement rate connects to Table 2's improper shelving and handling, as untrained staff exacerbate human-related vulnerabilities (Ngulube & Magazi, 2022). Poor infrastructural facilities (mean = 3.22) reflect challenges noted in Table 2 (poor ventilation and lighting) and Table 1 (flood barriers), with 83.33% agreement underscoring the systemic nature of these issues (Echezona & Ugwuanyi, 2021).

Limited digital preservation tools (mean = 3.10) received the lowest mean score but remain significant, aligning with Oluwaniyi (2020), who notes slow adoption due to financial and infrastructural constraints. The 80% agreement rate ties to Table 1's marginal digital backups, highlighting the library's reliance on vulnerable print resources (Ngulube & Magazi, 2022). The cumulative mean (3.290) confirms that these barriers collectively pose a substantial challenge, consistent with African library contexts where funding, expertise, and infrastructure deficits are prevalent (Ngulube & Magazi, 2022). The low standard deviations (0.671–0.816) indicate strong consensus, reinforcing the urgency of addressing these barriers.

The findings reveal limited disaster preparedness at Kashim Ibrahim Library, aligning with Aziagba and Edet (2018), who noted inadequate disaster management in Nigerian libraries. High humidity and outdated infrastructure, as identified by Abubakar and Musa (2023), are significant vulnerabilities. The lack of funding and trained personnel, as noted by Ngulube and Magazi (2022), hinders effective preparedness and recovery. Transitioning to digital resources, as suggested by Oluwaniyi (2020), could enhance recovery capabilities.

Challenges

Despite their importance, disaster preparedness and recovery face several challenges in libraries, particularly in developing countries like Nigeria:

1. Limited budgets restrict investments in equipment and training (Yaya & Opeke, 2019). For example, many Nigerian libraries allocate less than 5% of their budget to preservation (Aziagba & Edet, 2018).
2. Insufficient preservation knowledge among librarians hinders effective response (Abubakar & Musa, 2023).
3. Outdated buildings and erratic power supply increase vulnerabilities (Echezona & Ugwuanyi, 2021).
4. Unfavorable government policies, such as high import duties on preservation equipment, limit access to modern tools (Yaya & Opeke, 2019).
5. Many librarians prioritise service delivery over preparedness, underestimating disaster risks (Ngulube & Magazi, 2022). Librarians working in the Kashim Ibrahim Library, Ahmadu Bello University, Zaria, should always take disaster management seriously, as this would help prolong the existence of the library buildings and their resources. This may be achieved through the positive perception of librarians and the presence of the National Disaster Response Plan (NDRP) for contingency and preparation.

7. Conclusion

The study evaluated the disaster preparedness and recovery strategies at Kashim Ibrahim Library, Ahmadu Bello University, Zaria. The study provided empirical data on disaster preparedness and recovery, with a focus on library management, safeguarding collections, and ensuring service continuity. Preparedness involves proactive risk mitigation through planning, infrastructure, and training, while recovery focuses on restoring resources and services after a disaster. Given the above, challenges such as funding and infrastructure can be addressed by libraries adopting cost-effective strategies, including digitisation and staff development, to enhance

their resilience. For institutions like the Kashim Ibrahim Library, these concepts are crucial to preserving their role as knowledge hubs in the face of environmental and human-induced threats. The library's reliance on print resources further complicates recovery efforts. Addressing these issues is critical to safeguarding its collections.

Recommendations

1. **Library Management should** develop a detailed budget proposal highlighting the cost-benefit analysis of disaster preparedness investments, emphasising long-term savings from reduced restoration costs and lobby for special grants dedicated to library preservation, leveraging TETFund's mandate to support academic infrastructure and also the Nigerian Government through the Ministry of Education should provide adequate funding for libraries preparedness for training, digital preservation, acquisition of modern equipment for disaster track.
2. **Library Management** could partner with the Nigerian Library Association (NLA) and National Emergency Management Agency (NEMA) to organise biannual workshops in libraries and universities on disaster preparedness, covering fire safety, pest management, and digital preservation to train personnel actively, librarians and the university community with training sessions and simulation drills to develop practical skills, such as salvage techniques for damaged materials. Also, form a disaster response team to coordinate preparedness efforts.
3. **Library Management could** conduct a structural audit of the library building to identify weaknesses, such as poor ventilation or flood-prone areas, and prioritise upgrades, allocate capital project funds to renovate the library, install clean agent fire suppression systems, flood barriers, and industrial-grade dehumidifiers and develop a proposal for infrastructure improvements, including fire-resistant materials and modern ventilation systems.
4. **Library Management could** collaborate with the Nigerian Library Association (NLA) and National Emergency Management Agency (NEMA) to form a policy advocacy group that lobbies for reduced import duties on preservation equipment, such as fire suppression systems and digitisation scanners, support advocacy efforts by issuing formal requests to government bodies, highlighting the impact of policy gaps on academic libraries and **library staff promote** advocacy campaigns, such as writing position papers or attending policy forums, to raise awareness of the need for supportive policies.
5. **Library Management could organise** seminars and webinars at the University Ground Library Complex to educate staff on disaster risks and preparedness benefits, using case studies of library losses in Nigeria, develop a disaster preparedness handbook for staff reference, and integrate disaster preparedness into staff performance evaluations, incentivising proactive measures through university-wide campaigns, such as posters and newsletters.

References

1. Abareh, H.M. (2014). Disaster Preparedness by Heads of Academic Libraries in Northeastern Nigeria: A Global Perspective. *J. Acad. Librariansh.* 3 (1) (2014) 45–57.
2. Abubakar, M., & Musa, A. (2023). Disaster management in Nigerian academic libraries: Strategies and challenges. *Journal of Librarianship and Information Science*, 55(2), 123-134. <https://doi.org/10.1177/09610006221134567>
3. Ahmadu Bello University. (2020). *Kashim Ibrahim Library annual report*. Zaria: ABU Press.
4. Alegbeleye, G. O. (2019). Preservation and conservation strategies in African libraries: Challenges and prospects. *African Journal of Library, Archives and Information Science*, 29(1), 1-12.
5. Aziagba, P. C., & Edet, G. T. (2018). Disaster preparedness in Nigerian university libraries: A survey. *Library Philosophy and Practice (e-journal)*, 1897. <https://digitalcommons.unl.edu/libphilprac/1897>
6. Chakma, U.B., Hossain, M.A., Islam, K, Hasnat, T. & Kabir, M.H. (2021). Water crisis and adaptation strategies by tribal community: a case study in Baghaichari Upazila of Rangamati District in Bangladesh. *International Journal of Disaster Risk Management*, 2(2), 38–46.
7. Cvetković, V .M & Martinović, J.(2021). Innovative Solutions for Flood Risk Management. *International Journal of Disaster Risk Management*, 2(2), 72-99.

8. Cvetković, V. (2024a). Disaster Resilience: Guide for Prevention, Response and Recovery. In: Scientific-Professional Society for Disaster Risk Management, Belgrade.
9. Cvetković, V. M. (2024b). Tactical Approaches to Protection and Rescue in Traffic Accident-Induced Disasters. Firefighting and rescue operations in the aftermath of traffic accidents involving electric vehicles. International scientific and practical conference, Collection of Papers, 87-97.
10. Dada, K.S.J. (2016). Preservation of Information Resources at Federal College of Education, Zaria; Assessment Study. Library and Information Management Forum. *Journal of Ahmadu Bello University Library Complex*, 1 & 2, 71–80.
11. Echezona, R. I., & Ugwuanyi, C. F. (2021). Environmental Factors Affecting the Preservation of Library Materials in Nigeria. *International Journal of Knowledge Content Development & Technology*, 11(3), 45–60.
12. Echezona, R., Ugwu, C. & Ozioko, R. (2012). Disaster management in university libraries: perceptions, problems and strategies, *Int. Res.: J. Libr. Inf. Sci.* 2 (1) (2012) 22–29.
13. Hanspal, M.S. & Behera, B.(2024). Role of Emerging Technology in Disaster Management in India. *International Journal of Disaster Risk Management*, 6(2),134-148.
14. Ilo, P.I., Nkiko, C., Izuagbe, R. & Furfuri, I.M. (2020). Librarians' perception of disaster preparedness as a precursor for practical preservation and conservation of library resources in Nigerian university libraries. *International Journal of Disaster Risk Reduction*, 43:101381.
15. Ivanov, A. (2024). Disaster risk reduction and disaster risk management: State of play in North Macedonia. *International Journal of Disaster Risk Management*, 6(2), 183–198. <https://doi.org/10.18485/ijdrm.2024.6.2.13>
16. Laird Dissertation (2018). Total Population Sampling. Lund Research Ltd. Retrieved from <http://dissertation/laerd.com/total-population-sampling.php>.
17. Merikle, P.M. & Smilek, J.D. (2001). Eastwood, Perception without awareness: perspectives from cognitive psychology, *Cognition* 79 (1–2) (2001) 115–134.
18. Mokhele, M.O.(2024).Centres or Units: Making Sense of Decentralisation of Disaster Management in South African Municipalities.*International Journal of Disaster Risk Management*, 2(2):20-37.
19. National Emergency Management Agency (2025). The National Disaster Response Plan. Retrieved from <https://nema.gov.ng/the-national-disaster-response-plan/>
20. Ngulube, P., & Magazi, L. (2022). Disaster preparedness and recovery in African libraries: A review. *Journal of Archival Organization*, 19(1), 34-50. <https://doi.org/10.1080/15332748.2022.2034567>
21. Nwokedi, G.I., Panle, P.P. & Samuel, N. (2017). Disaster management and preparedness: a case study of University of Jos library, *Libr. Philos. Pract.* 1590 (2017). <http://digitalcommons.unl.edu/libphilprac/1590>.
22. Ogunleye, O.I. & Arohunsoro, S.J.(2024).An Assessment of Socio-Economic Impacts of Rainstorm Disaster on the Livelihood of the Residents of Ikole Local Government Area in Ekiti State, Nigeria. *International Journal of Disaster Risk Management*,6(2),214-222.
23. Oluwaniyi, S. A. (2020). Digital preservation in Nigerian academic libraries: Trends and challenges. *Library Hi Tech News*, 37(6), 15-20. <https://doi.org/10.1108/LHTN-02-2020-0015>
24. Osawe, R.E & Akpukpu, O.V. (2024).Impact of librarians' perception towards disaster management in university libraries in South-South, Nigeria. *Communicate: Journal of Library and Information Science*,26(2),272-282.
25. Oyeniran, G.K. (2023).Evaluation of Disaster Management Practices in Selected University Libraries in Nigeria.*Niger Delta Journal of Library and Information Science*, 4 (1)93–109.
26. Sugiyono, M. (2016). Metode Penelitian Pendidikan, Kuantitatif/ Kualitatif dan R&D. Bandung: Alfabeta, Indonesia.
27. Yaya, J. A., & Opeke, R. O. (2019). Funding and preservation challenges in Nigerian university libraries. *Mousaion: South African Journal of Information Studies*, 37(2), 1-18.
28. Zaveri, P. (2015). Digital Disaster Management in Libraries in India, *Library. Hi-Tech* 33 (2), 230–244.

APPENDIX
DISASTER PREPAREDNESS AND RECOVERY IN ACADEMIC LIBRARY QUESTIONNAIRE
(DPRALQ)

Name of University: KASHIM IBRAHIM LIBRARY, AHMADU BELLO UNIVERSITY, ZARIA

SECTION A: DEMOGRAPHIC INFORMATION

Demographic Information of the Respondents

Please tick ☒ the option that best describes your response. Please note that the questionnaire is intended for librarians working in Disaster Preparedness and Recovery only. Kindly answer all the questions in each section.

1. Position in the library

- a. Library assistants []
- b. Library officers []
- c. Supportive staff []
- d. Academic Librarians []

SECTION B: ANSWERING THE RESEARCH QUESTIONS

Read each statement carefully and tick ☒ all the columns on the right-hand side that appropriately:

1: Available Disaster Prevention Measures

S/N	Item	SA	A	D	SD
1	Fire extinguishers are available and functional.				
2	Flood barriers are installed.				
3	Pest control measures are regularly implemented.				
4	Digital backups exist for critical resources.				

2: Causes of Vulnerability to Disasters

S/N	Item	SA	A	D	SD
1	High humidity and temperature				
2	Outdated fire safety systems				
3	Poor ventilation and lighting				
4	Improper shelving and handling				

3: Barriers to Effective Disaster Preparedness and Recovery

S/N	Item	SA	A	D	SD
1	Inadequate funding				
2	Lack of trained personnel				
3	Poor infrastructural facilities				
4	Limited digital preservation tools				

Thank you for your time