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CHAPTER 8
SUMMARY AND FUTURE DIRECTIONS

8.1: Introduction
On an average, 464 disasters occur each year all over the world. (Silverman, 2004) These disasters cause considerable damage to people and infrastructure. It is almost impossible to measure the damage caused by a disaster. While losses of physical assets can be calculated, the effect on the disruption of the normal day to day life cannot be estimated. Psychological, socio-economic and cultural damage as well as opportunity loss cannot be measured in monetary terms. Further, rehabilitation of human beings, resetting up of infrastructure puts a heavy social and economic burden on the victims, thus interrupting and even pushing back the process of development of the region.

Realising that a disaster can put back the development goals of a region by several years, there has been a shift in the attitude of countries towards disasters over the last decade or so. Rather than facing disasters with a fatalistic attitude, countries are approaching disasters with a view to mitigating their effects, and by being prepared to face them. They have adopted disaster management systems covering the full disaster management cycle. The Indian government too has passed the Disaster Management Act in the year 2005 and under it developed an integrated system of policy and action.

Libraries too, all over the world have been affected by disasters and they too have developed detailed disaster management plans. The present research study was taken up to find out to what extent Indian libraries have been affected by disasters and what steps they have taken to be prepared for future disaster situations. The present chapter summarises the objectives and findings of the study and goes on to indicate future directions for research and action.

The literature search brought to light very few research articles, reports or sharing of experiences of Indian libraries. Similar literature for other countries was substantial. Thus a great need to explore the field was indicated.

8.2: Objectives and Findings
The main objective of this research was to achieve a contemporary overview of disaster management practices and issues in libraries in India. Further, as in other applied disciplines, the study also proposed to develop model guidelines for disaster management in Indian libraries. Thus the objectives included both questions for research inquiry as well as development of guidelines. Together the objectives sought to examine the different phases of disaster management cycle in libraries. All types of libraries were included with the exception of school libraries. Further the study was primarily limited to Western India.

A triangulation of different methods was used in the study. The survey method was used to collect information from a large number of libraries. A questionnaire consisting of 50 questions on disaster awareness, vulnerability, preparedness and experience was used to collect data from 291 libraries. Narrative analysis of the disaster incidents were obtained through detailed interviews of 33 librarians who had faced disasters, thus providing the researcher with a richer real life perspective. Literature and content analysis were used to create guidelines and checklists for Indian libraries. The individual objectives and the main findings relating to each are given below.

Objective 1:
To find out the perceptions of librarians about probability of disasters happening in their libraries
- A total of 165 (56.70%) of the librarians believed that there was 60% and above chances of at least one of the ten disasters happening in their libraries.
- Between 14% and 15% of the libraries believed that the probability of heavy rains and fire damaging their libraries was more than 60%.
- 11% of the libraries were perceived that mould and termites would also be a threat.
Objective 2:
To examine the vulnerability of libraries to disasters
A library’s vulnerability to disaster depends on various factors. Prominent among these are its environment, building conditions, location in the building and to some extent even the type of collection.

- Almost half of the libraries were located near the vicinity of a possible threat like river, ocean, lake, factory or airport.
- Libraries located on the ground floor or in the basement of a building and situated in a low lying area were highly susceptible to floods.
- Almost 9% of the libraries were located in areas which were prone to vandalism.
- 14.09% of the library buildings were more than 50 years old which could be dangerous if not prepared for disaster.
- 23.37% of libraries did not have load bearing structures while 16.84% of librarians did not know if the building was load bearing or not.
- 36.77% of libraries had earthquake resistant structures while 19.24% of libraries did not have such a structure. 41.58% of librarians were not aware if their libraries were earthquake resistant and 2.41% did not answer this question.
- 52.23% of libraries did not have an emergency exit.
- In 20% of libraries, reading area, administrative area and collection area were not separated, making the collection highly vulnerable.
- Paper based materials which are vulnerable to fire and water still constituted the major collection in most libraries.
- Overall 20 factors which would put libraries at risk were identified. Each library’s score was analysed to see how vulnerable they are to disasters.

Table 8.1 Vulnerability Score

<table>
<thead>
<tr>
<th>Vulnerability Score</th>
<th>Libraries</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
</tr>
<tr>
<td>10+</td>
<td>12</td>
</tr>
<tr>
<td>7-9</td>
<td>82</td>
</tr>
<tr>
<td>4-6</td>
<td>126</td>
</tr>
<tr>
<td>1-3</td>
<td>71</td>
</tr>
<tr>
<td>Total</td>
<td>291</td>
</tr>
</tbody>
</table>

- The results indicated that only 12 (4.12%) were highly vulnerable to disasters, while 82 (28.18%) of libraries were found to be moderately vulnerable. More than 60% of libraries were less vulnerable to disasters. (Table 8.1)

Objective 3:
To assess the level of disaster preparedness among libraries
Preparedness of a library to face disaster is reflected through various activities ranging from taking preventive measures of installing certain equipments and regularly maintaining them, to data backups and insurance, which may be useful in case of disasters. It also includes a disaster management plan or guidelines, and staff training to handle such situations. Precautionary and preventive measures include safety and security of the building, including electrical connections and supply, fire prevention etc. Also included are measures which limit the damage if a disaster occurs, such as providing emergency kit, connection to emergency services, etc.

- Structural audits were conducted only by 41.58% of libraries.
- About 52% to 54% of libraries had taken steps to ensure power outage or tripping in case of emergency.
- It is observed that 76.29% of libraries were regularly taking pest control measures.
- More than 85% of libraries have installed fire extinguishers, but fire and smoke alarms and water sprinklers were proportionately much less.
- 91.41% of libraries surveyed did not allow smoking and eating in the library premises.
- Data backup systems were in place at almost 80% of libraries.
- An emergency kit was available at 30.93% of libraries.
- Only 43.64% of libraries were insured.
- Floor plans were available with only 27.49% of libraries.

Installing fire extinguishers, taking backup of digital data and pest control are practices which are followed in more than three-fourth of the libraries. All other preventive measures are present in less than 60% of the libraries surveyed. The overall preparedness was low but the maintenance measures taken were even lower. (Table 8.2)
Table 8.2: Regular Maintenance of Equipments, Procedures and Services

<table>
<thead>
<tr>
<th>Item</th>
<th>Exist/Done (%) of Libraries</th>
<th>Maintained/Reviewed/Followed (%) of A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire extinguishers</td>
<td>85.91</td>
<td>58.08</td>
</tr>
<tr>
<td>Structural audit</td>
<td>41.58</td>
<td>67.60</td>
</tr>
<tr>
<td>Insurance</td>
<td>43.64</td>
<td>70.08</td>
</tr>
<tr>
<td>Data backup systems</td>
<td>79.38</td>
<td>91.77</td>
</tr>
<tr>
<td>Fire and smoke alarms</td>
<td>28.52</td>
<td>90.36</td>
</tr>
<tr>
<td>Contact with key emergency services (e.g. fire station, police station etc.)</td>
<td>43.99</td>
<td>44.53</td>
</tr>
<tr>
<td>Pest control/termite treatment</td>
<td>76.29</td>
<td>96.40</td>
</tr>
<tr>
<td>An emergency kit on each floor</td>
<td>30.93</td>
<td>88.89</td>
</tr>
</tbody>
</table>

- Librarians believed that digital backups, physical security and condition of the building were the most important activities relating to disaster management. Threats from terrorists and vandalism were considered least important.
- 79.38% of respondents took backups. Only 3.45% of libraries kept their backups outside the institution; another 13.85% kept the backups at multiple locations.
- Only 73.59% of libraries that took backups, checked the functionality of the backup.
- Librarians had not given much thought on specifically prioritizing which sections of the collection needed to be saved, one of the major preparedness measures.
- Only 16.84% of libraries claimed to have disaster management plans of which 25 were in written or digital form.
- Staff of only 19.93% of libraries had undergone some training relating to disaster management. Most of these were in the form of mock drills.
- While around two-thirds of libraries ensure keeping aisles and exits unobstructed, general building maintenance and electrical checking and maintenance, it is surprising to note that 25% of libraries stated that they rarely or never keep aisles and exits unobstructed.
- Around 16% have rarely or never been concerned about proper maintenance of the building and electrical equipments. Approximately one-third of the responding libraries undertake daily safety checks, maintain lists of specialized suppliers/services and display instructions in case of emergency.
- Less than 30% of libraries keep and update their floor plans.
- Less than one-fifth of the libraries have sought advice from police and fire services at regular intervals.
- Based on 20 measures which would prepare libraries to face disasters, each library was given a preparedness score. The result indicated that only 12.71% of libraries were well prepared and another 30.53% of libraries were moderately prepared to face disaster. The remaining libraries were either poorly or very poorly prepared. (Table 8.3)

Table 8.3: Preparedness Score

<table>
<thead>
<tr>
<th>Preparedness Score</th>
<th>Number of Libraries</th>
<th>% of Libraries</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-5</td>
<td>66</td>
<td>22.68</td>
<td>Very poorly equipped</td>
</tr>
<tr>
<td>6-10</td>
<td>98</td>
<td>33.68</td>
<td>Poorly equipped</td>
</tr>
<tr>
<td>11-15</td>
<td>90</td>
<td>30.93</td>
<td>Satisfactorily equipped</td>
</tr>
<tr>
<td>16-20</td>
<td>37</td>
<td>12.71</td>
<td>Well equipped</td>
</tr>
</tbody>
</table>

The vulnerability and preparedness scores show similar trends. (Figure 8.1)

Figure 8.1: Comparison of Vulnerability and Preparedness Scores

The low degree of preparedness was not because the libraries have not faced disasters in the past. Almost 30% of libraries (i.e. 87) had experienced a total of 126 serious and minor disasters in their library.
Librarians believed that of the various activities for disaster management, digital data security, condition of the building and general security were considered most important. Threats from terrorist and vandalism were considered least important.

Most libraries agreed that there was little in-house knowledge regarding disaster management, and 42.95% of librarians claimed to have knowledge of salvaging procedures. In all 26.80% of librarians were very confident that they could manage any disaster.

The study also sought to understand the opinions of librarians regarding the need for preparedness as well as the reasons. The majority of librarians were satisfied with the current level of preparedness. They did not believe that the design of the building or lack of insufficient time or low priority given by the management were obstacles to better preparedness.

**Objective 4:**
To examine the damage caused in disaster affected libraries

The narrative analysis of ten different disaster incidents as experienced by 33 institutes revealed the overpowering nature of the disasters and the complexities of managing them. Although the type of disaster and its severity as experienced by the libraries varied considerably, there were certain commonalities. Three of the incidents – floods in Maharashtra, floods in Surat, Gujarat and earthquake in Kutch, Gujarat were wide spread and affected several libraries. The other incidents referred to were limited to specific libraries. Some of these were major while others were comparatively minor. One had been vandalised, three had reported fires and the other two incidents were related to damage of digital data.

For the loss caused in three wide spread disasters is as follows:

- More than 5,18,233 items were damaged in 22 libraries affected due to floods in Maharashtra in July 2005 (16 libraries) and at Surat in August 2006 (6 libraries). Of the total damaged items 4,41,592 (85.21%) items had to be discarded as they were not in repairable condition.

- In the Maharashtra floods of July 2005, although four libraries had not shared their estimated loss in financial terms, it seems that the cost of loss of materials was assessed to be approximately Rs. 6.73 crore while in the Surat floods of August 2006, four libraries had estimated financial loss of Rs. 1.79 crore.

- Earthquake in Kutch damaged library buildings as well as the collection. In all loss of 1,10,829 items was estimated. The damage to buildings was high and the total loss of the building, books and furniture was estimated at Rs. 2.34,21,000/-. In the case of vandalism, at the Bhandarkar Oriental Research Institute, about 200 rare books were damaged. It is difficult to put a price tag on the loss.

- 1,60,000 items were destroyed by fire at the Gandhi Smriti Library of LalBahadur Shastri National Academy of Administration, Mussoorie in financial terms, information about the loss was not available.

- In one of the two minor fire incidents reported, 560 were damaged and had to be thrown away. In the second, the damage was worth Rs. 70,000/-. In the two digital disasters reported, the loss was more in the nature of inconvenience caused by loss caused by disruption in services.

**Objective 5:**
To study how the affected libraries coped with disasters.

The type of disaster and its severity as experienced by the libraries varied considerably. However there were certain commonalities:

- No library anticipated that the disaster would affect it.
- The libraries were totally unprepared for the disaster.
- Most librarians did not have any previous information about how to handle disasters.
- None of them had undergone any systematic training nor had they read about it.
- There was no systematic planning in handling the disaster and decisions were often taken on ad-hoc basis.
- Most of the library staff worked with a good team spirit and tried to salvage as much as they could.
- The readers, institutional staff and volunteers all participated in the process.
Chapter 8

Summary and Future Directions

- The librarians showed a lot of innovativeness in the methods used for salvaging the materials. Methods used for drying included use of halogen lamps, microwaves, ovens, irons, hair driers, blotting papers, talcum powder.
- The librarians interviewed displayed a strong sense of attachment and even a personal link with the collection.
- Since the librarians had not thought about the disaster there was no clarity regarding the section of the damaged collection which had to be saved on a priority basis.
- Post disaster most libraries have taken only a few preventive measures.
- There has been very little proper documentation about the incident and its effect on the library.
- In most cases there was no external financial support available to rebuild libraries. Institutional resources were the main source.
- There was very little awareness about existence of insurance for the library/institute.

Despite the lack of knowledge and the limited preparatory steps taken to ensure damage control, the librarians have seemingly coped with the situation. It was their commitment to their respective libraries, the team work of the staff and some simple innovations that had made it possible. With a little bit of planning and preventive measures, the damage caused by the disasters would have been considerably less.

Objective 6:

To develop guidelines and a sample disaster management plan for Indian libraries.

To achieve this objective various checklists, guidelines, templates, plans, published materials were examined. The contents of a model disaster plan and the planning process have been described. Several disaster plans have been compared using the content analysis technique. As a contribution of the present researcher, select guidelines for Indian libraries have been developed on certain aspects of disaster management. Interviews of experts and findings from the research study have been used to develop guidelines for Indian libraries. These are (1) checklist for risk assessment (2) basic guidelines for fire management (3) guidelines for digital data protection and (4) guidelines for insurance cover and (5) a sample disaster plan for a college library.

Being a pioneering study on the subject of disaster management in libraries, the research had not used a hypothesis. Instead it had begun with a few postulates derived from the researcher’s own knowledge and experience. The findings of the study indicate that the postulates are valid to a large extent. Libraries have incurred considerable loss due to disasters; they were not well prepared to meet disasters; the affected libraries did not have any thought out plan of action nor did they have much technical knowledge of handling disasters and salvaging damaged materials. However, they responded positively drawing resources and expertise from all available sources at hand and trying ad-hoc, common sense methods. Even after disasters, very few measures for mitigation and preparedness have been taken.

8.3 Future Directions

The study brought to light various areas of further research as well as a large number of action points. These are discussed in the following sections.

8.3.1: Recommendations for Research

There is very little research on disasters and their management in libraries in India. The present study is probably the first such attempt. The study indicates that there is scope for further research in several different directions. The present study covered different types of libraries in a particular region. Similar studies in other areas are possible. The capacity of libraries to manage a disaster may vary depending on the type and size of the library and its collection. Hence it is important to study the issue of disaster management amongst different specific groups of libraries. Further the approach of companies and research institutions to disaster management may differ from academic institutions. Comparative studies may give a better understanding of the issue.

Different types of disasters need to be managed differently. Studies focusing on the management of one particular type of disaster are called for. This would be able to focus on mitigation and preparedness measures specifically required for a particular type of disaster.
Salvaging of damaged material is an important component for all types of library disasters. The possibility of using internationally suggested methods of salvaging need to be examined at greater length. The non-availability or high cost of certain products and services in the market may limit the salvaging choices for Indian libraries. Further Indian climatic conditions may affect their suitability and appropriateness as well as cost-effectiveness for all types of libraries. India has a rich collection of old manuscripts and rare material. It is therefore likely that there is some amount of traditional knowledge in the area of conservation and preservation. Research needs to be conducted to identify appropriate indigenous knowledge, if any, adapt if required and adopt to suit current day disaster situations.

Insurance helps in the recovery process- both in the replacement of resources and restoration of services. Yet the present study indicated that less than 50% of libraries had been insured. Research on why this is so needs to be carried out. Such a research could also cover difficulties libraries face in getting insured.

Additional research is also needed to explore how libraries can help readers subsequent to large scale disasters. Further studies should determine the barriers that prevent survivors from using libraries after disasters, identify additional library or information-related services needed by survivors, explore how LIS professionals can collaborate with disaster planning and response professionals, and investigate how librarians can market libraries as information and community centres following disasters.

Disaster management is a multidisciplinary field and involves engineers, architects, scientists, administrators and social scientists. Management of library disasters can be viewed from these various disciplinary perspectives, e.g. a study of the psychological impact of library disasters on library personnel, the economic cost of the loss of service to researchers, the development of appropriate technology to salvage library materials after a disaster, development of standards for fire resistant furniture etc. are some examples for such research.

8.3.2: Recommendations for Action

The present research study highlighted the fact that there was very little awareness of disasters and their management. Moreover there was an equally low amount of knowledge about preparedness measures and salvaging techniques. These should be a priority area of concern to the library profession and disaster management authorities.

Although disasters do not happen often, individual libraries and their management should take proactive, preparatory measures. Certain simple and basic practices of managing a library can help limit the damages caused by a disaster if followed regularly. These practices can be extended further by adopting a few additional preventive measures. Disaster management tips should be incorporated into the orientation programs that are usually organized for new staff. The managers of the library and the institution need to work in collaboration to plan for disaster management and to implement simple preventive strategy. Volunteers from within the institution or the neighbouring community may be developed as a “Voluntary Force” for immediate response. Some basic orientation may be given to them. Disaster management should be given a high priority with full support and commitment at all levels.

LIS educators need to consider how much of disaster management should be covered in their B.L.I.Sc. and M.L.I.Sc. programmes, and also whether the issue calls for separate training, workshops or a continuing education programme. Library science schools can further push the above suggested research agenda through projects and theses.

Professional associations too, can work towards creating guidelines and a website for advice. The guidelines may be widely disseminated through websites and brochures to create awareness about them. Associations should also raise this issue at their conferences, establish special interest groups, and encourage librarians to share their experiences in journals and through their forums. Library associations may also consider helping libraries collaborate with each other to jointly face disasters. City-wise or state-wise networks of libraries can focus on establishing salvaging centres for a cluster of libraries in the region. For example, in the Mumbai-Konkan region, which is prone to flooding, common freeze drying facilities may be setup. The networks can
also initiate the establishment of small support groups of librarians who would specialise in helping disaster-stricken libraries. These support groups should themselves develop experience in certain focus areas.

Professional associations need to lobby with the national and state disaster management authorities to develop a special focus on disasters and their management in memory institutions like libraries, archives and museums. The disaster management authorities may also be requested to plan and support special training for librarians and conservators. Selected individuals from different regions may be selected for intensive training and a region-wise resource of expertise may be developed.

One difficult area in insurance relates to the valuation of the collection and its annual re-valuation. The library professional associations need to collaborate with chartered accountancy organisations to standardise the valuation of different types of library materials. Once developed, insurance companies will need to be convinced that the valuation is as fair as possible.

Library associations in India should consider it important to collaborate with Blue Shield an international treaty that formulates rules to protect cultural heritage during armed conflicts. The Blue Shield is the protective emblem of the 1954 Hague Convention, which deals with museums, archives, audiovisual supports, libraries, as well as monuments and sites. A National Blue Shield Committee on India may be formed by associations.

Regulatory bodies can ensure that libraries which are funded from public money comply with all the rules and regulations relating to disaster preparedness. For example, when UGC gives 100% grants for library buildings to universities, it can make it mandatory for them to comply with the regulations. Similarly, bodies funded by government funds such as research institutes or public libraries may also have similar conditions enforced. Academic institutions can be influenced to adopt disaster preventive measures, if it is considered in assessing and accrediting the college. Libraries can be induced to develop a disaster plan on similar grounds. On the other hand, building, fire and police departments also need to become more proactive in checking that the rules are followed by libraries.

Chapter 8
Summary and Future Directions

The disaster management organisations set up by the government can help in many ways. Besides training programmes, creating awareness of cultural heritage at risk, setting down salvaging protocols and developing central and regional facilities, for example, the authorities could consider the possibility of developing a National Disaster Center for Cultural Property. The basic objectives of the centre could be

- To establish a national team of experts in preserving and salvaging cultural heritage;
- Providing disaster management training for librarians, archivists, conservators and museum professionals to enable them to respond quickly.
- By stimulating technical research to improve salvage protocols.
- Creating national awareness about risks of disasters to cultural properties.

(Silverman, 2006)

As the above suggestions for research and actions indicate, a lot can and needs to be done. Awareness needs to be created, skills need to be developed, funds have to be earmarked, but perhaps most importantly, willingness and commitment has to be established. This is possible with good leadership.

8.4: Conclusion

The disaster management scene in India is changing. The Government of India has adopted a proactive approach to the prevention and management of disasters. The present study showed that the attitude of Indian librarians was by and large quite fatalistic, perhaps caused by lack of awareness. This approach needs to change to be more in tune with the changes in attitude towards disaster management, observed globally. An initial step in such a shift is the creation of awareness. The present study has been a step, perhaps the first, in this direction.

“A catastrophe occurs and years of work, the life work of generations is destroyed, together with irreplaceable collections. Of course, human life is a priority, but we, custodians of the collections, have to take initiatives to rescue and protect them - we have no excuse not to. We must fight for organizing recovery and conservation activities. By doing so we give confidence and hope to future generations and our job is justified. But that requires good nerves.” (Tarmann, 2000, p.22)
References:


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