Impact of the 2019 Floods in the Public Libraries of Kerala: A Study with Special Reference to Kannur District

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Abstract

Occurrence of natural disasters like floods, cyclones, tornados, hurricanes, heavy rains, earthquakes, landslides, droughts, cloudbursts and tsunamis has increased over the years. While all types of disasters have the potential of damaging libraries, water is not only the most common but also the most potent factor. The extent of damage inflicted by floods can range from minimal to completely destructive, depending on the materials involved and the amount of water, the circumstances and the purity of the water. Severe floods affected the south Indian state Kerala, due to unusually high rainfall during the monsoon season in August 2019. While public libraries in some districts like Ernakulam, Thrissur were worst affected, other distircts like Palakkad, Pathanamthitta and Kannur were also impacted. This paper analyses the extent of damage caused by floods in the public libraries, how the affected libraries coped with disaster and the level of disaster preparedness among libraries. It also throws light on the loss of service days, recovery measures taken by library, the range of progress achieved in recouping damages, sources of collection re-building, and the extent of official and community support received by the libraries for the mitigation of damages. The paper also offers suggestions to encounter future eventualities.

Keywords: *Impact of natural disasters; Disaster management; Public libraries, Kerala; Effect of floods on libraries*

1. Introduction

Disaster, as defined by the United Nations, is a serious disruption of the functioning of a community or society, which involve widespread human, material, economic or environmental impacts that exceed the ability of the affected community or society to cope using its own resources. (United Nations Office for Disaster Risk Reduction, n. d.)

A disaster is an occurrence arising with little or no warning. It happens with such a magnitude that it adversely affects the normal life for a long period. It requires major effort from the community, region or country to recoup or recover from its effects. Disasters lead to serious disruption of the functioning of a society, causing widespread human, material, or environmental losses leading to the interference of external bodies for assistance in addition the government. Cambridge Dictionary (n. d.) defines disaster as an "event that results in great harm, damage, or death, or serious difficulty". They are events of great magnitude which cause loss and disruption. They usually occur suddenly and their impact is experienced over a long period.

Disasters can be categorized in various ways. The most common way of categorizing disasters is based on the underlying cause - natural or man-made. Global warming, El-Nino effect and other environmental factors have, in recent years, increased the occurrence of natural disasters like floods, cyclones, tornados, Hurricanes, heavy rains, earthquakes, landslides, droughts, cloudbursts and tsunamis. Man-made disasters are explosions, fires, accidents, spillage, building collapse, electricity failure, chemical and nuclear radiation, bomb blasts, terrorism, war, insurgency etc.

Table 1 - Types of disasters

Natural Disasters	Manmade Disasters
Earthquakes	Terrorism
Floods	Wars
Cyclones	Vandalism
Tsunamis	Fires
Landslides	Accidents
Cloud burst	System failure
Tornados	Bomb blasts
Droughts	Digital
Avalanches	Biological & chemical

Some authors classify disasters into three types: naturals, man mades, and hybrid disasters (Shaluf,

2007). As India is a very large country, different regions are vulnerable to different natural disasters. Of these, floods, cyclones and droughts are the most frequent. For example, during rainy season the peninsular regions of South India are mostly affected by cyclones floods and states of West India experience severe drought during summer. The disaster management activities are undertaken as per the norms and rules of the Disaster Management Act (2005).

While all types of disasters have the potential of damaging libraries, water is not only the most common but also the most potent factor. Damage can be caused through a tsunami or floods from a nearby water body such as an ocean or river. Heavy rains, or wind driven hurricanes, cyclones and tornados also destroy collections. In all these natural disasters water is a key damaging factor.

2. Public Library scenario in Kerala

Kerala, the southernmost state of India with highest literacy in the country has a long tradition of public libraries. It can boast of the first public library in the country with the formation of Trivandrum Public Library in 1829 which emerged as the State Central Library in 1958. The public library development in Kerala has an older history than that of any other state. The library development occurred at different periods in the three erstwhile constituent areas of Kerala, i.e. Travancore, Cochin and Malabar. Ernakulam Public Library, Thrissur Public Library and a number of smaller libraries came up in Travancore and Cochin states in the 19th century. There also emerged public libraries in Kozhikode and Thalassery by the beginning of 20th century in the Malabar region which was under the control of the British. The functioning of hundreds of libraries led to the formation of Travancore Granthasala Sangam in 1945 which started affiliating the existing libraries and establishing new ones in all villages. With the formation of the state of Kerala in 1956, the Tiru-Kochi Granthasala Sangham became Kerala Granthasala Sangham. Thanks to the incessant activities of the Sangham, thousands of libraries were established by 1960s throughout Kerala. The Public Library Act, 1989 is more democratic in structure compared to other library acts in India. The library administration is categorized as State Library Council, District Library Council and Taluk Library Council (Kerala State Library Council, 2019a)

By March 2019, more than 8500 libraries were affiliated to Kerala State Library Council (KSLC). The affiliated libraries are qualified to avail grants and librarian's allowances after the gradation process are categorized into seven grades viz. A+, A, B, C, D, E, and F. According to Kerala State Library Council Annual Report 2018- 19, a total of 6198 libraries availed grants from the Council. (Kerala State Library Council, 2019b). On this basis, it can be calculated that each panchayat in Kerala on an average has more than six libraries. In other words, there is one library for every 6000 population of Kerala.

3. Kerala floods

Kerala's once-in-a-lifetime rainfall was 2,378 mm over 88 days, four times more than normal–but 30 percent less and spread over 61 days more than the deluge of 1924, the most intense flood in the state's recorded history, submerging as it did almost the entire coastline. In 1924 considered to be a landmark moment in Kerala's history .That year the much endeared season of rains in the state. Transformed into a disaster of monstrous dimensions .The current state of deluge in Kerala is reminiscent of the monsoon, almost century back, when god's own country transformed into a calamity zone. The significance of the flood was such that many old people in Travancore used to anchor their memories in relation to the flood. (https://en.wikipedia.org/wiki/ Kerala floods)

3.1 Flood in 2018

On 16 August 2018, severe floods affected the south Indian state Kerala, due to unusually high rainfall during the monsoon season. It was the worst flood in Kerala in nearly a century. Over 483 people died, and 140 are missing.. All 14 districts of the state were placed on red alert. According to the Kerala government, one-sixth of the total population of Kerala had been directly affected by the floods and related incidents. The Indian government had declared it a Level 3 Calamity, or "calamity of a severe nature" It is the worst flood in Kerala after the great flood that took place in 1924.

Thirty-four out of the fifty-five dams within the state were opened, for the first time in history. All five overflow gates of the Idukki Dam were opened at the same time, and for the first time in 26 years 5 gates of the Malampuzha dam of Palakkad were opened. Heavy rains in Wayanad and Idukki have caused severe landslides and have left the hilly districts isolated. The situation was regularly monitored by the National Crisis Management Committee, which also coordinated the rescue and relief operations. (https://en.wikipedia.org/wiki/2018 Kerala floods)

3.2 Flood in 2019

On 8 August 2019, due to heavy and severe rainfall in the Monsoon season, severe flood affected Kerala. As a security measure in the prevailing situation of heavy rains, the Government of Kerala had issued Red alert in the 9 districts in Northern and Central Kerala, orange alert in 3 districts of Central Kerala, and yellow alert in the 2 districts of southern Kerala. Thousands of people have been evacuated to safer places and relief camps. A

total of 101 people have died due to rain-related incidents since 14 August 2019. (https://en.wikipedia.org/wiki/2019 Kerala floods)

4. Previous studies

Literature is abound with examples related to library disasters due to floods. Only a few a examined here. Baryala (2006) has described the impact of floods in the national library of France in Paris in 1910. A vivid description of the extent of heavy damage meted out by the national library and in Florence, Italy in 1966 is given by van der Hoeven, & van Albada (1996). Other significant descriptions include those of Fithian (1999), Polisensky (2002), Cassell (2004), Amarasiri (2005), Gamage (2005), Clareson and Long (2006), Davis (2006), Ray (2006), Baum (2009), Flaherty (2009), Lunde and Smith (2009), Callzonetti and Long (2011), Topper (2011), Zaveri (2014), and Wani (2017). This is only a select list dealing with accounts of flood ravages of libraries in different parts of the world. In India, Kishore Chandra Satpathy (2007), Sundarayya Vignana Kendran (n. d.), and Wani and Ganaje (2017) give accounts of flood affected libraries in the North-East, Hyderabad and Kashmir respectively. Trishanjit Kaur (2009) highlights the importance of disaster planning in university libraries in India.

5. Impact of flood on public libraries in Kerala

The floods adversely affected the libraries of mainly four districts namely, Pathanamthitta, Ernakulam, Thrissur and Palakkad. Kerala State Library Council (KSLC) has estimated the extent of loss in the above four districts. The details of the extent of loss in the four districts are given in Table 2.

Though the table deals with the estimates of loss in only four libraries that does not mean that there are no damages in other districts. But the estimates are being made.

5.1 Kannur district

Kannur is one of the districts along the west coast in the state of Kerala, India. The town of Kannur is the district headquarters and gives the district its name. The old name, Cannanore is the Anglicized form of the Malayalam name “Kannur”. Kannur district is bounded by Kasaragod District to the north, Kozhikode district to the south, Mahe district to the southwest and Wayanad District to the southeast. To the east the district is bounded by the Western Ghats, which forms the border with the state of Karnataka (Kodagu district). The Arabian Sea lies to the west. Paithalmala is the highest point in the Kannur District (1,372m). Enclosed within the southern part of the district is the Mahé district of the Union Territory of Pondicherry. The district was established in 1957. There are 5 taluks in Kannur district, namely Thaliparamba, Iritty, Thalassery, Kannur, Payannur.

The torrential rain that tapered off on 09 August 2019 Friday morning picked up intensity in the afternoon, raising fears of escalation of the flood situation in areas lying on the banks of Valapattanam River and its tributaries. The relief felt in the morning when the water level of the overflowing rivers and tributaries started receding after the intensity of the rain reduced and replaced by concern as the rain gathered strength by afternoon. The situation became grim as overflowing rivers breached the banks and flooded the nearby areas. Several families were evacuated from Pamburuthi and Koralayi; river islands here in the morning as parts of Iritty town experienced flooding by the afternoon (https://www.thehindu.com/news/national/ kerala/many-areas-in-kannur-district-flooded-as-rivers-overflow/article28971047.ece)

6. Objectives of the study

The main objective of this research is to understand the extent of loss and the response and recovery of public libraries in Kannur during 2019 flood. Specifically, it attempted to:

Table 2

Extent of loss to libraries in four districts in the 2019 floods

		Extent of loss (in Rs.)						
Sl. No.	**District**	**Books**	**Furni-ture**	**Equip-ment**	**Electro-nic gadgets**	**Building**	**Records**	**Total**
1	Pathanamthitta					600000		600000
2	Ernakulam	10135922	808250	396250	765300	1614000	39100	13758822
3	Thrissur	2464121	237908	16900	206350	425000	1500	3351779
4	Palakkad	211283						211283
	Total	**12811326**	**1046158**	**413150**	**971650**	**2639000**	**40600**	**17921884**

(Source: Records from Kerala State Library Council)

1. To examine the damage caused by floods in the public libraries.
2. To study how the affected libraries coped with disaster.
3. To assess the level of disaster preparedness among libraries.
4. To understand the society' approach towards libraries on such incidents.

7. Methodology

Total number of public libraries in Kannur is about 980 of which 20 libraries were affected badly due to the flood and hence the present study is trying to draw out the real picture of the 20 libraries which were severely affected by the 2019 flood.

The methodology used for the study was scheduled interview and telephonic interview methods to collect details from the librarians of the flood affected libraries. It was specifically aimed at collecting the details of the loss incurred in the libraries and to elicit information about their experiences during the flood period and the preparations for the future. For the purpose of the study, only those 20 libraries which were badly affected were selected. Details of these libraries were collected from the District Library Council of Kannur District. The collected data was analyzed and presented in the form of tables and figures with necessary interpretation alongside.

8. Analysis

8.1 Flood Loss

8.1.1 Intensity of loss to library collections

In the event of a natural disaster to a library, the intensity of the loss or damage to the collection may differ from one another, but going too deep to assess the assessment of loss is not possible with the librarians of these libraries. Therefore, for measuring the intensity of loss to the library collection a general categorization was made use of like up to 25 percent loss of books as weak, up to 50 percent loss as moderate, up to 75 percent as severe and above 75 percent as extremely severe.

Table 3

Intensity of loss to library collections

Intensity of loss to library collections	Number of libraries
Weak (up to 25%)	2(10%)
Moderate (up to 50%)	7(35%)
Severe (up to 75%)	8(40%)
Extremely severe (above 75%)	3(15%)
Total	**20(100%)**

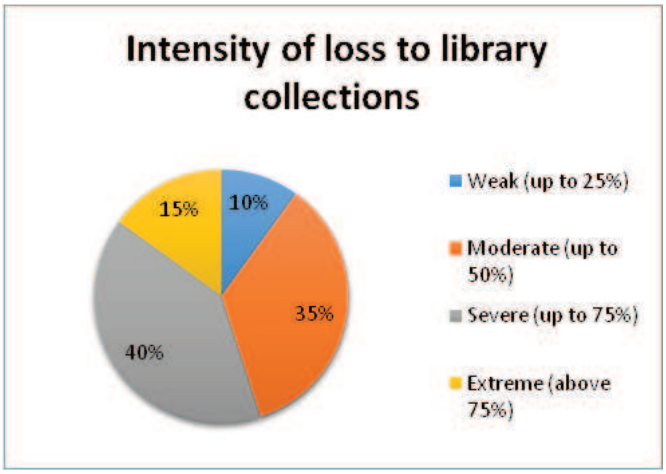

Figure 1. Intensity of loss to library collections

It is clear from the table that 15 % of the total number of libraries had lost almost their collections. 40 % were affected severely while 35 % had lost 25% to 50% of the collection. Collections of only 2 libraries (10%) were affected slightly. The intensity of any natural disaster may vary from one library to another depending on the distance of the library from the river, arrangement of stacks within the library etc.

8.1.2 Intensity of loss to library furniture and infrastructure

The loss of furniture and infrastructures in a library become a serious concern when it covers the loss of computer, electrical equipment and donated or gifted items over a long period of time, which the library may not be able to get back in short period or ever again. Here also, to measure the intensity of the loss to the furniture and infrastructure, the same scale used above were adopted.

Table 4

Intensity of loss to library furniture and infrastructure

Intensity of loss to library furniture and infrastructure	Number of libraries
Weak (up to 25%)	5(25%)
Moderate (up to 50%)	3(15%)
Severe (up to 75%)	8(40%)
Extreme (above 75%)	4(20%)
Total	**20(100%)**

When it comes to the case of furniture and other infrastructures the most important factor which makes the losses terrible is the electrical and electronic equipment which are more fragile to the disaster like flood. The libraries with computers, printers, photostat machines,

power backup machines etc. faced huge loss of damage. A not so immediate adverse impact is the rusting of even the strong almirahs. Eight libraries (40 %) were affected severely i.e. damaged up to 75 %.

8.1.3 Loss of service days

The library is a nonprofit service provider to its community, loss of service days is a terrible loss any library could ever have. It is clear that the 2019 flood has made many libraries to keep their doors closed. This varies from library to library. Knowing this is important in assessing the effects of the flood the extent of loss to the community is quantifiable in monetary terms.

Table 5
Loss of service days

Loss of service days	Number of libraries
Below 1 week	0(0%)
Below 2 weeks	2(10%)
Below 1 month	6(30%)
Above 1 month	12(60%)

From the above data the intensity of the impact of flood is clear. The data shows that none of the affected library could open and function within 1 week. And only 2 of them managed to restart their functioning in 2 weeks. And the major share i. e., 12 of them (60%) had to be kept locked for more than one month due to various reasons.

8.2 Response and recovery

8.2.1 Recovery measures taken by library

The prime and major responsibility for adopting recovery measures in the face of a disaster like floods lies with the library itself since the society is affected as a whole. The library staff have to adopt a lot of recovery measures at the time of disaster, during the hit time and after the amelioration of the situation. Understanding the recovery measures adopted is important in assessing the response and recovery by the library.

Table 6
Recovery measures taken by library

Sl. No	Recovery measures taken by library	Libraries
1	Preservation of books	20(100%)
2	Refurbishing of buildings	9(45%)
3	Refurbishing of equipment and furniture	15(75%)

From the analysis we have found that all libraries hit by the flood have done their best to recover the books by drying and rebinding of damaged books. Only 9 libraries (45%) have done the refurbishing activities such as plastering of the walls and painting and repairing the floor. This is mainly due to various reasons such as financial constrains or lack of support. Fifteen libraries (75%) have actively tried to repair their damaged equipment and furniture by voluntary effort and by claiming insurance.

8.2.2 Post-flood aid

When it comes of recovery and smooth functioning the major focus is upon the financial aspects. When in urgencies such as these kinds of disasters, the financially weak libraries expect support from higher authorities for survival. Knowing the approach of authorities in this respect is essential in a complete disaster analysis.

Table 7
Post-flood aid from various agencies

Sl. No	Source of assistance	No. of Libraries
1	District Library Council	2(10%)
2	Taluk Library Council	3(15%)
3	Grama Panchayath	6(30%)
4	Others	14(70%)

The analysis shows that the financial supports were not generated from the expected sources. The higher bodies have given very less support and to very few libraries. There may be various reasons why they couldn't provide the expected help. At the same time it is clear that the libraries have got support from various other sources like NGO's and other private individuals and library enthusiasts. It is obvious that many libraries have accepted assistance from more than one source.

8.2.3 Recovery/progress range

Once normalcy has been restored, most of the libraries have started regular operations. Knowing the pace of recovery and other related aspects of restoration is essential in preparing a well packed disaster plan. Since, preparation of a scale for the exact measurement of the progress of recovery is not easy, a range of the progress was presented to the librarians and they were asked to express their view. Their perspectives about the range of progress achieved is given in Table 8.

Table 8
Range of recovery/progress achieved after 6 months

Sl. No.	Recovery/progress range	Libraries
1	Not at all progressed	0(0%)
2	Slightly progressed	2(10%)
3	Somewhat progressed	12(60%)
4	Very much progressed	5(25%)
5	Extremely progressed	1(5%)
	Total	**20(100%)**

It is obvious from the analysis that every library hit by the flood has managed to achieve some level of progress.

While only one (5%) library claimed to have 'extremely progressed' 5 (25%) have progressed very much. But majority (60%) have somewhat progressed. Only 10 percent has made slight progress. No library is left behind in the recovery plan.

8.2.4 Sources of collection re-building

After being severely hit by such a huge disaster and loss of collections, the major concern is about the collection re-building and related aspects. Realizing that rebuilding of the collection is the most essential aspect of the recovery plan, various attempts were made by the libraries for the purpose. The major techniques adopted by the libraries are given in Table 9.

Table 9

Sources of collection re-building

Sl. No	Sources of collection re-building	Libraries
1	Purchase	25%
2	Donations of household collections	30%
3	Sponsorships	40%
4	Others	5%

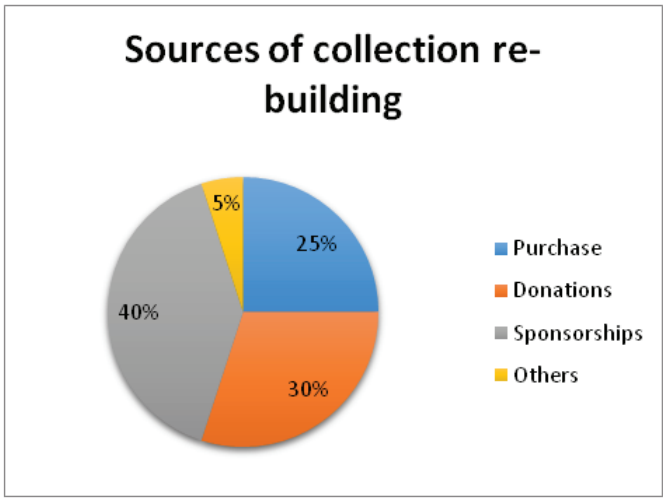

Figure 2. Sources of collection re-building

It can be seen from the analysis that the collection re-building was done by 40 percent of the libraries mostly through the sponsorships from various stakeholders like NRI's and other library enthusiasts. The fact that 30% of the libraries built up their collections through donations from community mainly from the private collections of households serves as a proof of the public support. Only 25 percent of the libraries tried to make up the loss through direct purchase.

8.2.5 Precautions for future

Disasters of such kind are not usual or expected phenomena. However, the floods in two consecutive years behoved the authorities to be careful to learn from past mistakes and remain vigilant. So, after the situation calmed down efforts in this regard were made. Many librarians have got disaster management awareness classes from their local bodies and disaster management authorities. It has to be pointed out that the classes were general in nature and not specifically geared to the needs of libraries. However, people felt the need for preparedness with a feasible disaster management plan.

8.2.6 Governmental and community support

Every public library serves their community through various service activities, and in return these communities are the ones who runs these libraries through cooperative efforts. And as these public libraries are an essential part of every community overall growth and development the governments have interests in the smooth functioning of these institutions called as peoples universities.

After the flood which lasted for weeks with its aftereffects the major concern in the society were the cleaning activities. And for the libraries affected the public have helped very much. And form the government's part the "thozhilurappu" workers have helped very much.

9. Suggestions

The study about the impact of floods on public libraries leads to the following suggestions.

i. Water can damage all types of resources whether paper based or digital. Libraries must have strategies to prevent these resources from getting damaged due to water or if damaged, repair them.

ii. While locating the site for new libraries, attention has to be paid to ensure that water level does not reach the location even in the worst case. Markings made on previous occasions should be taken for the purpose.

iii. Librarians of all affiliated libraries should be trained on disaster preparedness. The training should contain topics with practical as to how to deal with fire, floods, rains and all types of disasters.

iv. It should cover assessment and mitigation of risks, methods of assessing the loss and their proper recording, immediate action plan and recovery efforts.

v. Most of the libraries resort to drying of the books in direct sunlight. This is the most unsuitable methods since separation of pages which fused

together may not be possible once the books are dried up. Therefore, librarians have to be taught about methods of air drying, dehumidification, freezer drying and vacuum freezer drying.

vi. Special techniques to be used for recovering digital documents and electronic gadgets also should be covered in the training programmes.

vii. It is high time that Kerala State Library Council set apart a consolidated fund to the tune of Rs. 50 lakhs aimed at disaster management of libraries affiliated to it. The annual interest gained out of the funds should be added to the corpus so that it will development into a sizeable amount.

viii. Libraries should take the initiative of disseminating information related to rescue measures to be resorted to in the case of disasters of various types faced by the community.

10. Conclusion

From the data analyzed it was evident that the majority of libraries affected by the flood belonged to rural areas. Also most of the libraries did not have any kind of disaster management plan. The libraries incurred considerable loss of collections, furniture and equipment. The support from the proper channel was way below the expected level. And it was known from the analysis that libraries have got very good support from the public and library enthusiasts.

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