International Journal of Humanities and Social Science Invention (IJHSSI)
ISSN (Online): 2319 – 7722, ISSN (Print): 2319 – 7714
www.ijhssi.org ||Volume 9 Issue 6 Ser. V || June 2020 || PP 27-29

Coping- Up Mechanism and Flood Management: A Study on Kerala Flood 2018

Richu S Panachikattu[1] Ann Mary George[1]
[1] *CHRIST (Deemed to Be University)*

ABSTRACT: *Most of the Indian cities are lacking basic flood management and Kerala even till recently has not worked towards building a mitigation program. The 2018 flood was unanticipated and there were many reasons that made this flood the worst in the history of Kerala. The lack of government policy's and relief fund was the main reason for the failure in adaptation. There were many mitigation programs that were adopted by the government with help of other states like Assam but it did not help the Kerala government to completely overcome the impact of the flood. Therefore, this study provides an analytical framework to the policy makers by stressing on the coping up mechanism, with reference to structural and non-structural measures such as dams, levees along with early warning system and hazard forecasting.*
KEYWORDS: *Coping up mechanism, flood, structural measures, non-structural measures*

Date of Submission: 18-06-2020 Date of Acceptance: 04-07-2020

I. INTRODUCTION

Kerala popularly known as God's own country is home to tropical climate and rich monsoon making flood a regular phenomenon. When we look into the history of flood in Kerala, the last flood that had a great effect on the Kerala economy was in 1924 and the main reason was the overflow of Periyar River due to the sudden opening of the Mullaperiyar dam. The flood had affected most of the districts in Kerala and led to thousands dying along with destruction of property and crops. In the year 2018, the monsoon hit critically the south-west state affecting all 14 districts and as a result more than 384 individuals died, around 280,679 displaced 50,000 houses destroyed and almost 80000 km length roads and 39 bridges got damaged. (State Relief Commissioner, 2018)

The Kerala State Disaster Management Authority had set a red alert and there were 3200 relief camps open all over Kerala (Keelery, 2018). The central ministry had released financial aid of Rs 500 crores in addition to previously announced relief of Rs 100 crores. The loss in agriculture was around Rs 600crores, and there was huge loss in tourism. As per the Kerala CM, "a loss of Rs. 19,512 crores have been estimated in the flood-ravaged state of Kerala." (Singh B.,2018) The 2018 flood was unexpected and there were many reasons that marks it as one of the worst and it was aggravated due to the lack of structured policy and relief fund with respect to adaptation and mitigation. There were many mitigation programs that were adopted by the government with help of other states like Assam but it did not help the Kerala government to completely overcome the impact of the flood. As an offshoot another flood occurred in 2019, but the impact was not as enormous as 2018. Therefore, this study will provide an analytical framework to the policy makers as provides an in-depth analysis of the coping up mechanism and flood management model for Kerala.

II. METHODOLOGY

The study is a descriptive study of the 2018 Kerala flood for which data was collected from the government websites and government reports.

III. DISCUSSION

The literature has been divided into floods that took place internationally and nationally. According to Haraguchi (2011) the effect of the drawn-out floods on the world and the Thailand economy was very huge. UNISDR assessed that Thailand's 2011 flood decreased the world's industrial production by 2.5%. The World Bank assessed that the real GDP growth rate in 2011 declined from 4.1% to 2.9%. The effect of the flooding in Thailand was clearly reflected in the insured damage, which was around $10 billion. The main three significant non-life coverage organizations in Japan paid out $5.3 billion for the damage brought about by the flooding in Thailand. (Masahiko Haraguchi, 2011). Komolafe (2015) stated about the disturbing flood events in Nigeria which traces back to 1963 when Ogunpa River was over-flown causing loss of lives and property and this reoccurred in 1978, 1980 and 2011, with damages and death of more than 100 individuals separately. Between

2011 and 2012 Lagos recorded 8 major significant floods. As per International Disaster Database on Nigeria calamity, in 2012 alone, around 7,000, 867 lives were affected. (Akinola Adesuji Komolafe, 2015).

Faiz Ahmed (2018) highlighted the sensitivity of Chennai to floods as it has been observed that in every five to ten years gigantic floods happen in Chennai and this can be attributed to the lack of flood management plans or lack of mitigation measures. Insufficient drainage system, blockages, infringements of flood fields are the predominant reasons behind flooding in Chennai. The primary method for managing urban floods in Chennai is through improving Storm Water Drain System. In 2015 Chennai saw the heaviest precipitation causing flooding in which 3742 km of street and road length was immersed along with more than 13.5 km length of railroad lines and the air terminal were overflowed causing significant disruptions. (C. Faiz Ahmed, 2018). This flood had cost Indian economy an estimated amount of $3 billion in losses and made it the eighth-most expensive natural disaster in 2015. (Mukherjee, 2016).Gogoi(2016) highlights the 2016 flood in Assam in which around 17, 94,554 individuals were affected and 3,374 towns were submerged (Gogoi, 2016).The different flood management activities taken up for short and medium term by the Brahmaputra Board, Ministry of Water Resources and Water Resource Department of Assam under different strategy are - incorporate development of bank revetments, stone prods and bolder diverters. Since flood are customary wonders in the area so it had become fundamental to screen the circumstance ahead of time and based on the precipitation and forecast of IMD, there was high likelihood of recognizing flood hitting areas. Therefore, various fundamental actions have been done for example recognizing possibly frail territories, limit building and speedy reaction. All the possibly weak banks were recognized as powerless and a 24x7 Emergency Control Room had been set up with sufficient number of supporting staffs. (Rakesh Kumar, 2018).

IV. FINDINGS

Kerala is a state that was recognized as a flood prone area very recently hence it is important to carefully develop a framework of coping up mechanism for the state of Kerala. Coping up mechanism is a method in which people are adapting within the remaining resources to achieve various ends or tries to reduce the damages that happened in the flood. Coping up mechanism is not easy to assess but by certain levels and models it can be achieved and it mainly revolves around these three steps that are 1. preparation2. response3. recovery. Some of the coping up mechanism implemented around the world revolve around flood management actions. The numerous flood management actions were taken up on short- and medium-term measures by Bangladesh and Assam under various policy initiatives included construction of bank revetments, stone spurs and bolder deflectors. In recent years an advance method was planned for flood security and anti-erosion works using geotextiles and gasbag's for safety of the banks. From 1960s Bangladesh had implemented about 628 flood control drainage and irrigation projects. Importance of community involvement in disaster management plan was giving precedence by focusing on:1) Providing awareness to the community on impact of floods2) Development of services on evacuation centres. 3) Fiscal fund allocation comprising awareness fund.

The Kerala state had mainly two guidelines for coping up mechanism: Disaster Management Act 2005 and State Disaster Management Plan which was an extension of Nava Kerala Pathathi which was formed in the year 2016.Applying the general framework of coping up mechanism to Kerala we observe the four stages -The first stage is preparedness; in this stage the government and the public organizations have to prepare for the flood and give alert to the public as in the 2018 flood the lack of preparedness was the main reason for the loss and damages. Next comes up the response, the response in this disaster in not only the governments but also the public as it is not possible for the government to get access to all areas and provide all needs hence needs to have a response team that signals and coordinates the entire relief process. Recovery is the most difficult stage as it involves not only high cost but also an increased level of planning time and effort in the process. It is also important to add adaptation as a stage as flood affected areas will not be the same as before therefore the people have to adapt to the new scenario. For this the government will have to provide assistance in terms of fund and technology.

The above stages can be proposed using two main measures that is structural measures and non-structural measures and each district in Kerala needs to develop a context specific coping up mechanism. Structural measures such as dam can be used to prevent flood and dams can play a vital role in districts like Idukki, Kottayam, and Palakkad. Proper drainage system can be used in districts like Ernakulum and Thrissur. The main structure Kerala as a state should invest is in levees as this will block the overflowing water from the rivers, because as per reports the 2018 flood was described as the worst because of the over flow of rivers. Therefore, a proper management plan to protect the water and land resources around the river basin has to be taken. This can be achieved by the construction of levees across the river or dams. Floodway and spillways can also be used especially in Alappuzha which is the most flood prone. In the non-structural measures there are a number of things that Kerala can adopt such as hazard mapping which highlights areas affected or vulnerable to flood. So, construction of houses using appropriate material with proper base can be an approach that can be undertaken. Some others are hazard forecasting, early warning systems, and emergency plans along with

education and awareness building. Hazard forecasting, a highly advanced technology is an important measure that has to be taken in case of Kerala. Information technology can be used efficiently in recovery and also in reconstruction of events as can be used to recover the data lost. Knowledge and innovation find importance mainly in the production of green technologies, especially in the background of housing and sanitation, which seems to be the two important segments that are mostly affected by flood. Therefore, the policy implication can be summarised under four broad headings that is integrated system of resources management, hazard informed use of land approach, society-centred approach and to promote technology, knowledge and innovation.

V. CONCLUSION

The 2018 flood was unanticipated and there were many reasons that made this flood the worst in the history of Kerala. The lack of government policy's and relief fund was the main reason for the failure in adaptation. There were many mitigation programs that were adopted by the government with help of other states like Assam but it did not help the Kerala government to completely overcome the impact of the flood. Therefore, this study provides an analytical framework to the policy makers by stressing on the coping up mechanism that each district can undertake with reference to structural and non-structural measure such as dams, levees along with early warning system and hazard forecasting.

REFERENCES

[1]. Akinola Adesuji Komolafe, F. O. (2015). A Review of Flood Risk Analysis in Nigeria. American journal of environmental sciences.
[2]. C. Faiz Ahmed, N. K. (2018). Flood Vulnerability Assessment using Geospatial Techniques: Chennai. Indian Journal of Science and Technology.
[3]. Gogoi, M. (2016). Flood Disaster in Assam:Socio-EconomicVulnerability and Control Measures. South Asian Journal of Multidisciplinary Studies.
[4]. Masahiko Haraguchi, U. (2011). Flood risks and impacts: A case study of Thailand's floods in 2011 and research questions for supply chain decision making. International JournalofDisasterRiskReduction
[5]. Mukherjee, D. (2016). Effectof Urbanization on Flood - A Review with recent flood in Chennai.InternationalJournal ofEngineering Sciences and Research Technology.
[6]. Rakesh Kumar, A. R. (2018). A Case study on the flood situation of Assam State. International Research Journal of Engineering and Technology.
[7]. Singh, B. (2018). An overview on Kerala floods: Loss ofhuman lives as well as biodiversity in gods oncountry.
[8]. State Relief Commissioner, D. M. (2018). Kerala Floods – 2018. Government of Kerala.
[9]. Keelery, S. (2018). Statista. Retrieved from Statista: https://www.statista.com/chart/15242/key-data-regarding-the-severe-flooding-in-the-indian-state-of-kerala/

Richu S Panachikattu, et. al. "Coping- Up Mechanism and Flood Management: A Study on Kerala Flood 2018."*International Journal of Humanities and Social Science Invention (IJHSSI)*, vol. 09(6), 2020, pp 27-29. Journal DOI- 10.35629/7722